

=> fil reg; d stat que 121; fil cap1; d que nos 122

~~FILE=REGISTRY~~ ENTERED AT 12:28:18 ON 08 AUG 2001  
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 PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
 COPYRIGHT (C) 2001 American Chemical Society (ACS)

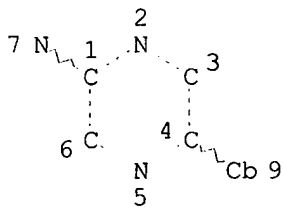
STRUCTURE FILE UPDATES: 7 AUG 2001 HIGHEST RN 350670-45-0  
 DICTIONARY FILE UPDATES: 7 AUG 2001 HIGHEST RN 350670-45-0

TSCA INFORMATION NOW CURRENT THROUGH January 11, 2001

Please note that search-term pricing does apply when  
 conducting SmartSELECT searches.

Structure search limits have been increased. See HELP SLIMIT  
 for details.

L1 STR



*full file search  
done on this structure*

NODE ATTRIBUTES:

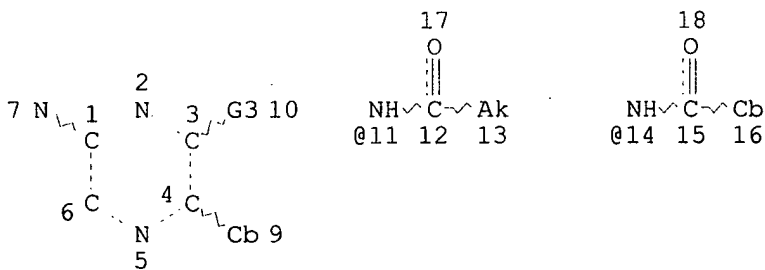
NSPEC IS RC AT 7 - Node 7 is ring or chain  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE

L3 648 SEA FILE=REGISTRY SSS FUL L1  
 L5 STR



*subset search  
done with the following  
6 structures to address  
provisos.*

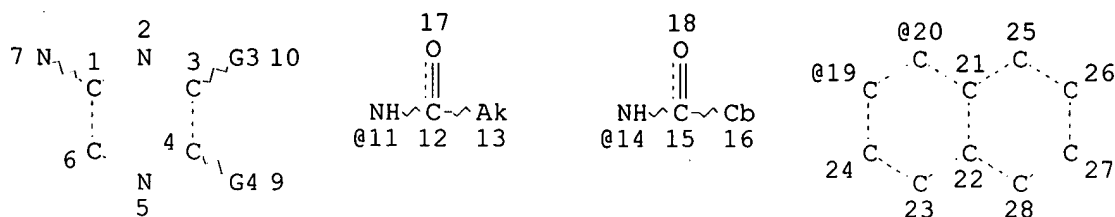
VAR G3=H/NH2/11/14

NODE ATTRIBUTES:

NSPEC IS RC AT 7  
 CONNECT IS E1 RC AT 9  
 CONNECT IS E1 RC AT 13  
 DEFAULT MLEVEL IS ATOM  
 GGCAT IS UNS AT 9  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 17

STEREO ATTRIBUTES: NONE  
L6 STR



VAR G3=H/NH2/11/14

VAR G4=PH/19/20

NODE ATTRIBUTES:

NSPEC IS RC AT 7

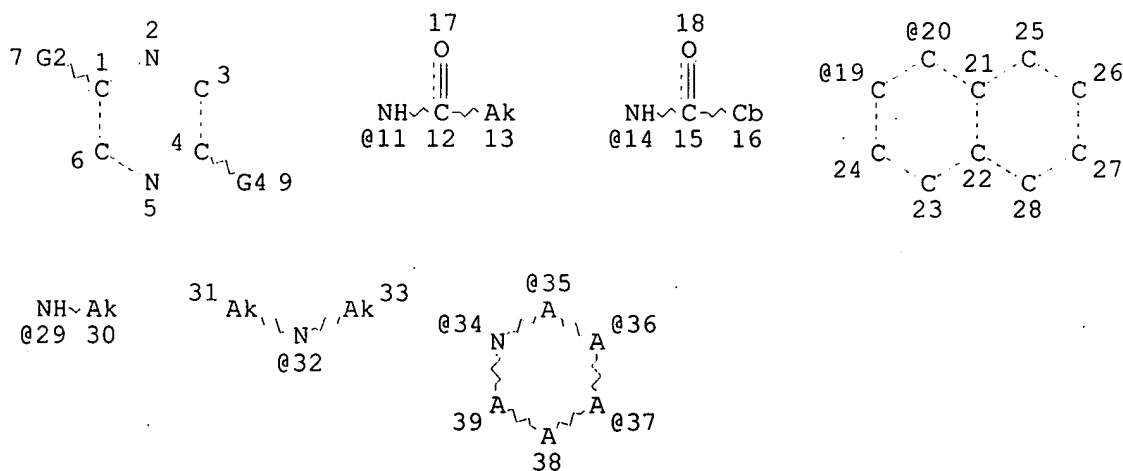
CONNECT IS E1 RC AT 13

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 27

STEREO ATTRIBUTES: NONE  
L7 STR



VAR G2=H/11/14/29/32/34/35/36/37

VAR G4=PH/19/20

NODE ATTRIBUTES:

CONNECT IS E1 RC AT 13

CONNECT IS E1 RC AT 30

CONNECT IS E1 RC AT 31

CONNECT IS E1 RC AT 33

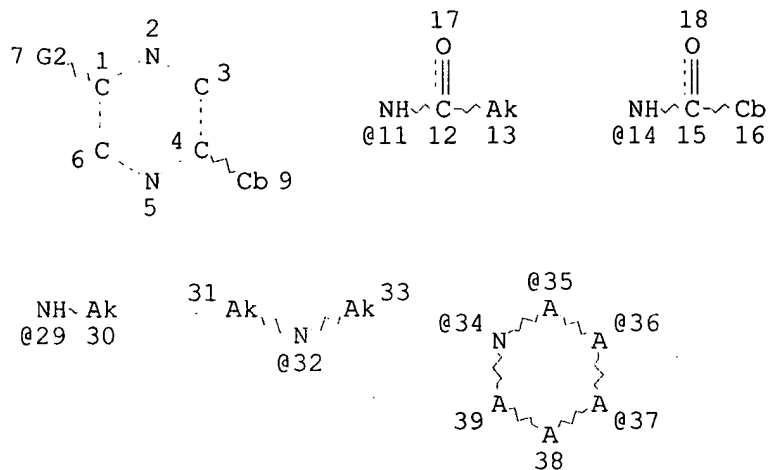
DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 37

STEREO ATTRIBUTES: NONE  
L8 STR



VAR G2=H/11/14/29/32/34/35/36/37

NODE ATTRIBUTES:

CONNECT IS E1 RC AT 9

CONNECT IS E1 RC AT 13

CONNECT IS E1 RC AT 30

CONNECT IS E1 RC AT 31

CONNECT IS E1 RC AT 33

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

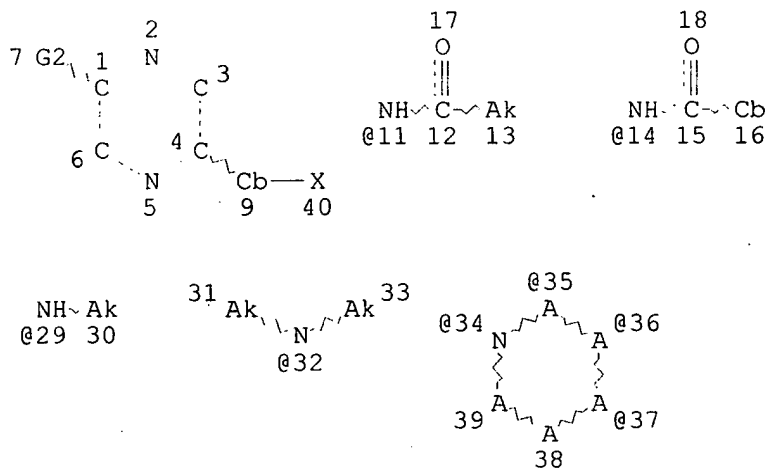
GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 27

STEREO ATTRIBUTES: NONE

L9 STR



VAR G2=H/11/14/29/32/34/35/36/37

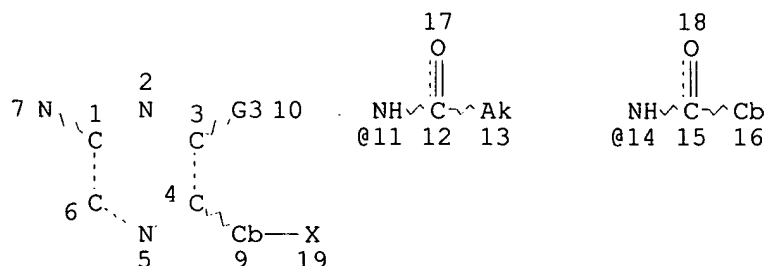
NODE ATTRIBUTES:

CONNECT IS E1 RC AT 13

CONNECT IS E1 RC AT 30  
 CONNECT IS E1 RC AT 31  
 CONNECT IS E1 RC AT 33  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 28

STEREO ATTRIBUTES: NONE  
 L10 STR

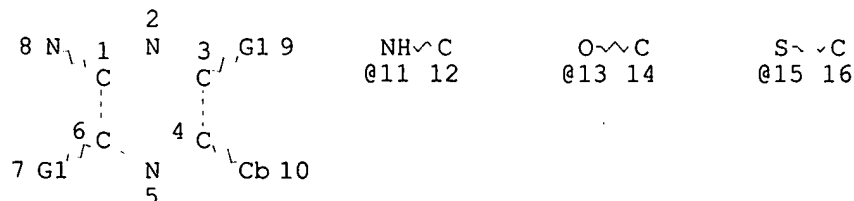


VAR G3=H/NH2/11/14

NODE ATTRIBUTES:  
 NSPEC IS RC AT 7  
 CONNECT IS E1 RC AT 13  
 DEFAULT MLEVEL IS ATOM  
 GGCAT IS UNS AT 9  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE  
 L12 183 SEA FILE=REGISTRY SUB=L3 SSS FUL ((L7 AND (L8 OR L9)) OR (L6 AND (L5 OR L10)))  
 L13 465 SEA FILE=REGISTRY ABB=ON L3 NOT L12  
 L15 STR



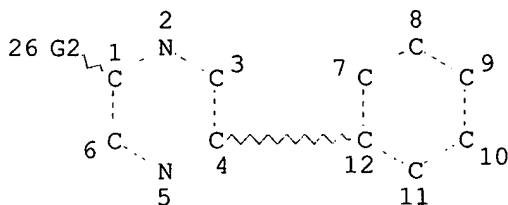
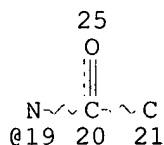
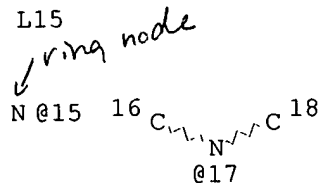
VAR G1=H/X/CN/NO2/NH2/C/11/13/15  
 NODE ATTRIBUTES:  
 NSPEC IS RC AT 8  
 DEFAULT MLEVEL IS ATOM  
 GGCAT IS UNS AT 10  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 16

*R, & R<sub>3</sub> more  
 specifically defined*



STEREO ATTRIBUTES: NONE

L17 357 SEA FILE=REGISTRY SUB=L13 SSS FUL L15  
L19 STRNH~C  
@13 14N~S~C  
@22 23 24*R<sub>2</sub> more specifically defined*

VAR G2=NO2/NH2/13/15/17/19/22

NODE ATTRIBUTES:

NSPEC	IS	RC	AT	14
NSPEC	IS	R	AT	15
NSPEC	IS	RC	AT	16
NSPEC	IS	RC	AT	18
NSPEC	IS	RC	AT	21
NSPEC	IS	RC	AT	24

*nodes 14, 16, 18, 21, 24  
are ring or chain*

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 26

STEREO ATTRIBUTES: NONE

L21 339 SEA FILE=REGISTRY SUB=L17 SSS FUL L19

100.0% PROCESSED 357 ITERATIONS  
SEARCH TIME: 00.00.03

339 ANSWERS

FILE 'CAPLUS' ENTERED AT 12:28:19 ON 08 AUG 2001

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FILE COVERS 1947 - 8 Aug 2001 VOL 135 ISS 7

FILE LAST UPDATED: 7 Aug 2001 (20010807/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

This file supports REGISTRY for direct browsing and searching of

all substance data from the REGISTRY file. Enter HELP FIRST for more information.

CAPLUS now provides online access to patents and literature covered in CA from 1947 to the present. On April 22, 2001, bibliographic information and abstracts were added for over 2.2 million references published in CA from 1947 to 1966.

The CA Lexicon is now available in the Controlled Term (/CT) field. Enter HELP LEXICON for full details.

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L1          STR
L3          648 SEA FILE=REGISTRY SSS FUL L1
L5          STR
L6          STR
L7          STR
L8          STR
L9          STR
L10         STR
L12         183 SEA FILE=REGISTRY SUB=L3 SSS FUL ((L7 AND (L8 OR L9)) OR (L6
AND (L5 OR L10)))
L13         465 SEA FILE=REGISTRY ABB=ON L3 NOT L12
L15         STR
L17         357 SEA FILE=REGISTRY SUB=L13 SSS FUL L15
L19         STR
L21         339 SEA FILE=REGISTRY SUB=L17 SSS FUL L19
L22         136 SEA FILE=CAPLUS ABB=ON L21

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=> fil uspat; d que nos 123

FILE "USPATFULL" ENTERED AT 12:29:09 ON 08 AUG 2001  
CA INDEXING COPYRIGHT (C) 2001 AMERICAN CHEMICAL SOCIETY (ACS)

FILE COVERS 1971 TO PATENT PUBLICATION DATE: 7 Aug 2001 (20010807/PD)  
FILE LAST UPDATED: 7 Aug 2001 (20010807/ED)  
HIGHEST GRANTED PATENT NUMBER: US6272681  
HIGHEST APPLICATION PUBLICATION NUMBER: US2001011386  
CA INDEXING IS CURRENT THROUGH 7 Aug 2001 (20010807/UPCA)  
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 7 Aug 2001 (20010807/PD)  
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Jun 2001  
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Jun 2001

>>> Page images are available for patents from 1/1/1998. Patents <<<  
>>> and applications are typically loaded on the day of publication.<<<  
>>> Page images are available for display by the following day. <<<  
>>> Image data for the /FA field are available the following update.<<<

>>> Complete CA file indexing for chemical patents (or equivalents) <<<  
>>> is included in file records. A thesaurus is available for the <<<  
>>> USPTO Manual of Classifications in the /NCL, /INCL, and /RPCL <<<  
>>> fields. This thesaurus includes catchword terms from the <<<  
>>> USPTO/MOC subject headings and subheadings. Thesauri are also <<<  
>>> available for the WIPO International Patent Classification <<<  
>>> (IPC) Manuals, editions 1-6, in the /IC1, /IC2, /IC3, /IC4, <<<

>>> /IC5, and /IC (/IC6) fields, respectively. The thesauri in <<<  
 >>> the /IC5 and /IC fields include the corresponding catchword <<<  
 >>> terms from the IPC subject headings and subheadings. <<<

This file contains CAS Registry Numbers for easy and accurate substance identification.

L1 STR  
 L3 648 SEA FILE=REGISTRY SSS FUL L1  
 L5 STR  
 L6 STR  
 L7 STR  
 L8 STR  
 L9 STR  
 L10 STR  
 L12 183 SEA FILE=REGISTRY SUB=L3 SSS FUL ((L7 AND (L8 OR L9)) OR (L6 AND (L5 OR L10)))  
 L13 465 SEA FILE=REGISTRY ABB=ON L3 NOT L12  
 L15 STR  
 L17 357 SEA FILE=REGISTRY SUB=L13 SSS FUL L15  
 L19 STR  
 L21 339 SEA FILE=REGISTRY SUB=L17 SSS FUL L19  
~~L23 13 SEA FILE=USPATFULL ABB=ON L21~~

=> dup rem 122,123

FILE 'CAPLUS' ENTERED AT 12:29:18 ON 08 AUG 2001  
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FILE 'USPATFULL' ENTERED AT 12:29:18 ON 08 AUG 2001  
 CA INDEXING COPYRIGHT (C) 2001 AMERICAN CHEMICAL SOCIETY (ACS)  
 PROCESSING COMPLETED FOR L22  
 PROCESSING COMPLETED FOR L23

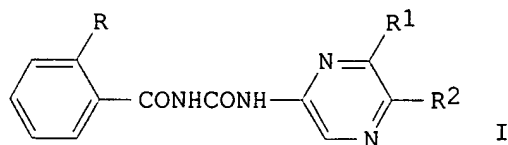
~~L24 145 DUP REM L22 L23 (4 DUPLICATES REMOVED)~~  
 ANSWERS '1-136' FROM FILE CAPLUS  
 ANSWERS '137-145' FROM FILE USPATFULL

~~=> d ibib abs hitstr 1=145; fil cao; s 121~~

L24 ANSWER 1 OF 145 CAPLUS COPYRIGHT 2001 ACS DUPLICATE 1  
 ACCESSION NUMBER: 1982:35307 CAPLUS  
 DOCUMENT NUMBER: 96:35307  
 TITLE: 1-(Mono-o-substituted benzoyl)-3-(substituted pyrazinyl) ureas  
 INVENTOR(S): Miesel, John L.  
 PATENT ASSIGNEE(S): Lilly, Eli, and Co. , USA  
 SOURCE: U.S., 15 pp. Cont.-in-part of U.S. Ser. No. 881,300, abandoned.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4293552	A	19811006	US 1979-62393	19790731
PRIORITY APPLN. INFO.:			US 1978-881300	19780227

GI



AB Aminopyrazines underwent an addn. reaction with 2-RC<sub>6</sub>H<sub>4</sub>CONCO (R = Br, Cl) to yield the resp. ureas I [R<sub>1</sub> = H, Cl, Me, CF<sub>3</sub>; R<sub>2</sub> = H, CF<sub>3</sub>, Ph, halo-, methoxy-, (trifluoromethyl)-, or phenylphenyl], which exhibited insecticidal activity. Thus, 2-ClC<sub>6</sub>H<sub>4</sub>CONCO was added to 2-amino-5-(4-bromophenyl)-6-methylpyrazine and the mixt. was stirred overnight to give I (R = Cl, R<sub>1</sub> = Me, R<sub>2</sub> = 4-BrC<sub>6</sub>H<sub>4</sub>).

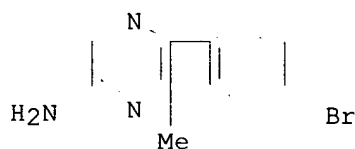
IT 59489-75-7 59489-80-4 69816-34-8

RL: RCT (Reactant)

(addn. reaction of, with benzoyl isocyanates)

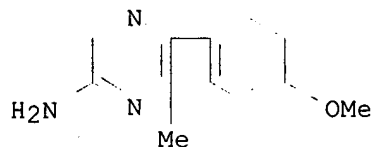
RN 59489-75-7 CAPLUS

CN Pyrazinamine, 5-(4-bromophenyl)-6-methyl- (9CI) (CA INDEX NAME).



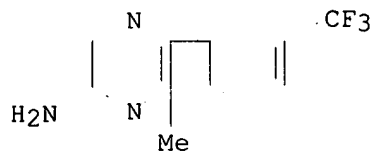
RN 59489-80-4 CAPLUS

CN Pyrazinamine, 5-(4-methoxyphenyl)-6-methyl- (9CI) (CA INDEX NAME)



RN 69816-34-8 CAPLUS

CN Pyrazinamine, 6-methyl-5-[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



IT 59489-72-4 59489-73-5 59489-79-1

59489-82-6 69816-45-1 69816-46-2

69816-47-3 69816-48-4 69816-49-5

69816-50-8 69816-51-9 69816-52-0

69816-53-1 69816-55-3 69816-56-4

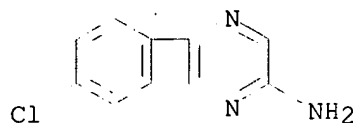
80348-73-8

RL: RCT (Reactant)

(addn. reaction of, with chlorobenzoyl isocyanate)

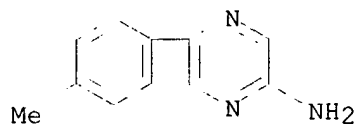
RN 59489-72-4 CAPLUS

CN Pyrazinamine, 5-(4-chlorophenyl)- (9CI) (CA INDEX NAME)



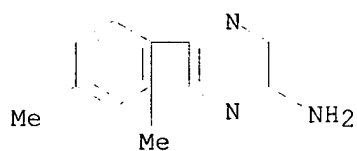
RN 59489-73-5 CAPLUS

CN Pyrazinamine, 5-(4-methylphenyl)- (9CI) (CA INDEX NAME)



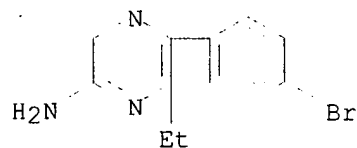
RN 59489-79-1 CAPLUS

CN Pyrazinamine, 5-(2,4-dimethylphenyl)- (9CI) (CA INDEX NAME)



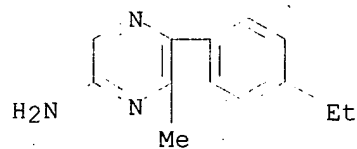
RN 59489-82-6 CAPLUS

CN Pyrazinamine, 5-(4-bromophenyl)-6-ethyl- (9CI) (CA INDEX NAME)



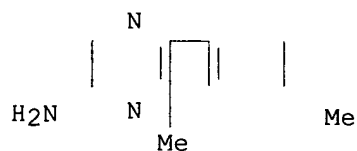
RN 69816-45-1 CAPLUS

CN Pyrazinamine, 5-(4-ethylphenyl)-6-methyl- (9CI) (CA INDEX NAME)

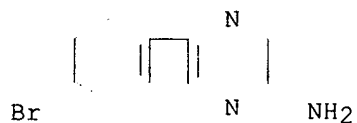


RN 69816-46-2 CAPLUS

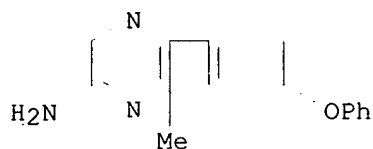
CN Pyrazinamine, 6-methyl-5-(4-methylphenyl)- (9CI) (CA INDEX NAME)



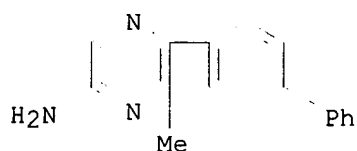
RN 69816-47-3 CAPLUS  
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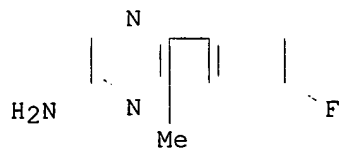
RN 69816-48-4 CAPLUS  
 CN Pyrazinamine, 6-methyl-5-(4-phenoxyphenyl)- (9CI) (CA INDEX NAME)



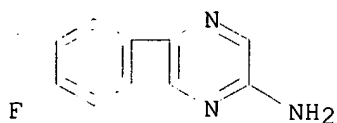
RN 69816-49-5 CAPLUS  
 CN Pyrazinamine, 5-[1,1'-biphenyl]-4-yl-6-methyl- (9CI) (CA INDEX NAME)



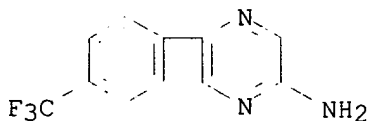
RN 69816-50-8 CAPLUS  
 CN Pyrazinamine, 5-(4-fluorophenyl)-6-methyl- (9CI) (CA INDEX NAME)



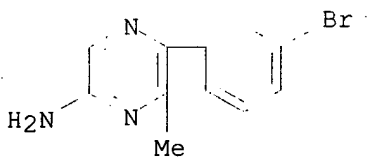
RN 69816-51-9 CAPLUS  
 CN Pyrazinamine, 5-(4-fluorophenyl)- (9CI) (CA INDEX NAME)



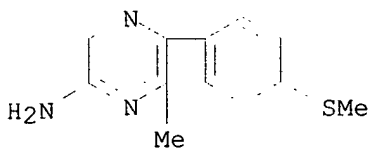
RN 69816-52-0 CAPLUS  
 CN Pyrazinamine, 5-[4-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



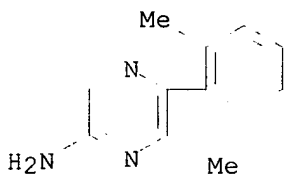
RN 69816-53-1 CAPLUS  
 CN Pyrazinamine, 5-(3-bromophenyl)-6-methyl- (9CI) (CA INDEX NAME)



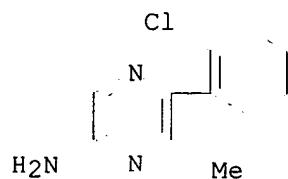
RN 69816-55-3 CAPLUS  
 CN Pyrazinamine, 6-methyl-5-[4-(methylthio)phenyl]- (9CI) (CA INDEX NAME)



RN 69816-56-4 CAPLUS  
 CN Pyrazinamine, 6-methyl-5-(2-methylphenyl)- (9CI) (CA INDEX NAME)



RN 80348-73-8 CAPLUS  
 CN Pyrazinamine, 5-(2-chlorophenyl)-6-methyl- (9CI) (CA INDEX NAME)

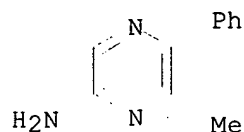


IT 59489-36-0P 69816-44-0P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and addn. reaction of, with chlorobenzoyl isocyanate)

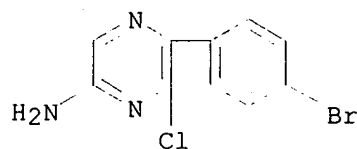
RN 59489-36-0 CAPLUS

CN Pyrazinamine, 6-methyl-5-phenyl- (9CI) (CA INDEX NAME)



RN 69816-44-0 CAPLUS

CN Pyrazinamine, 5-(4-bromophenyl)-6-chloro- (9CI) (CA INDEX NAME)

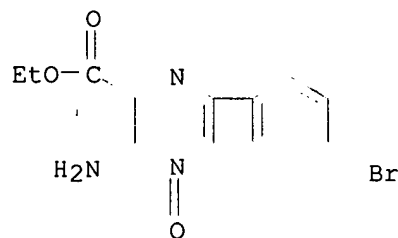


IT 69816-40-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and chlorination of)

RN 69816-40-6 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-6-(4-bromophenyl)-, ethyl ester, 4-oxide  
(9CI) (CA INDEX NAME)



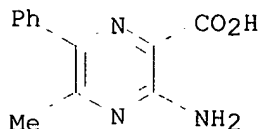
IT 5284-16-2P 69816-43-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and decarboxylation of)

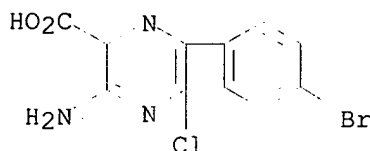
RN 5284-16-2 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-5-methyl-6-phenyl- (7CI, 8CI, 9CI) (CA INDEX NAME)

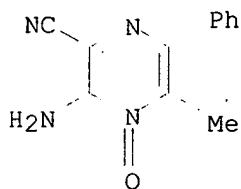




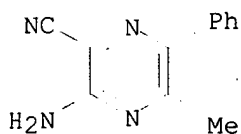
RN 69816-43-9 CAPLUS  
 CN Pyrazinecarboxylic acid, 3-amino-6-(4-bromophenyl)-5-chloro- (9CI) (CA INDEX NAME)



IT 59489-34-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and deoxidn. of)  
 RN 59489-34-8 CAPLUS  
 CN Pyrazinecarbonitrile, 3-amino-5-methyl-6-phenyl-, 4-oxide (9CI) (CA INDEX NAME)

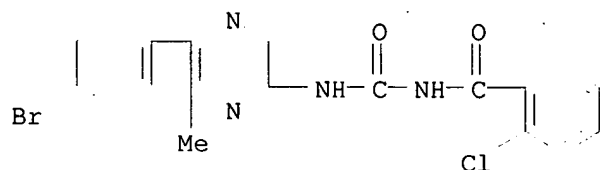


IT 59489-35-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and hydrolysis of)  
 RN 59489-35-9 CAPLUS  
 CN Pyrazinecarbonitrile, 3-amino-5-methyl-6-phenyl- (9CI) (CA INDEX NAME)

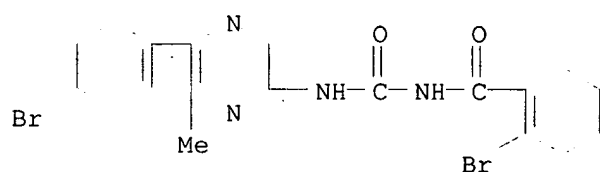


IT 69816-57-5P 69816-60-0P 69816-61-1P  
 69816-62-2P 69816-65-5P 69816-66-6P  
 69816-67-7P 69816-69-9P 69816-70-2P  
 69816-71-3P 69816-72-4P 69816-73-5P  
 69816-74-6P 69816-75-7P 69816-76-8P  
 69816-77-9P 69816-78-0P 69816-79-1P  
 69816-80-4P 69816-81-5P 69816-83-7P  
 69816-84-8P  
 RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)  
 (prepn. and insecticidal activity of)

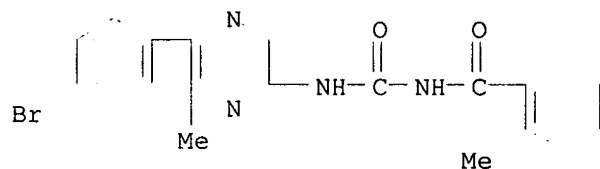
RN 69816-57-5 CAPLUS  
 CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)



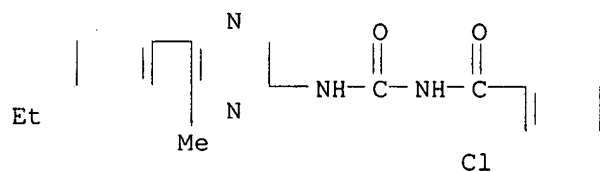
RN 69816-60-0 CAPLUS  
 CN Benzamide, 2-bromo-N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



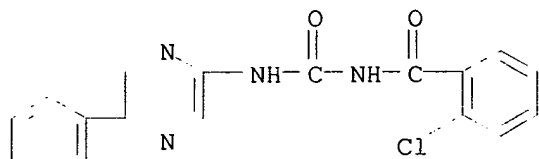
RN 69816-61-1 CAPLUS  
 CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2-methyl- (9CI) (CA INDEX NAME)



RN 69816-62-2 CAPLUS  
 CN Benzamide, 2-chloro-N-[[[5-(4-ethylphenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



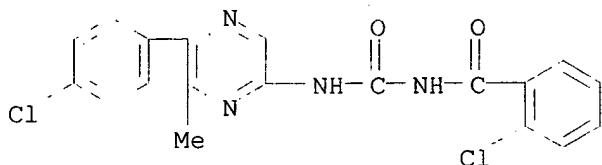
RN 69816-65-5 CAPLUS  
 CN Benzamide, 2-chloro-N-[[[5-(4-methylphenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



Me

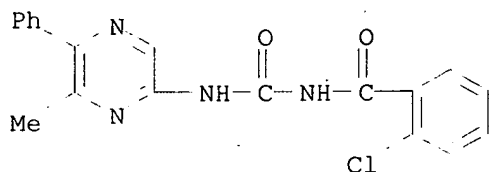
RN 69816-66-6 CAPLUS

CN Benzamide, 2-chloro-N-[[[5-(4-chlorophenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



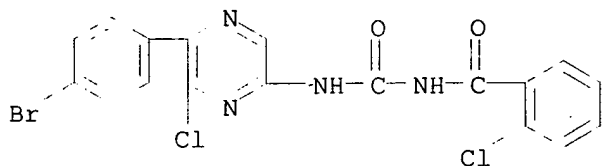
RN 69816-67-7 CAPLUS

CN Benzamide, 2-chloro-N-[[[6-methyl-5-phenylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



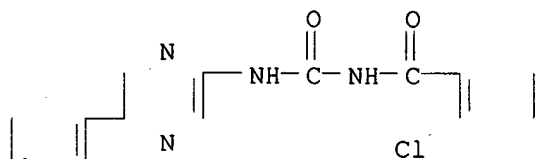
RN 69816-69-9 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-chloropyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)



RN 69816-70-2 CAPLUS

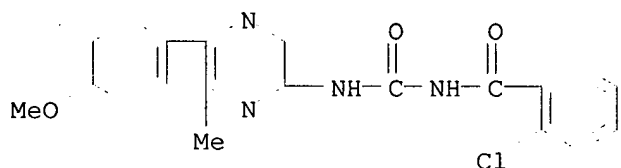
CN Benzamide, 2-chloro-N-[[[5-(4-chlorophenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



Cl

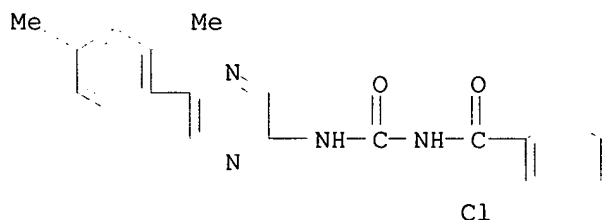
RN 69816-71-3 CAPLUS

CN Benzamide, 2-chloro-N-[[[5-(4-methoxyphenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



RN 69816-72-4 CAPLUS

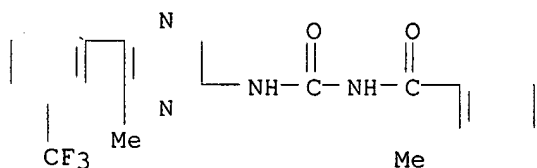
CN Benzamide, 2-chloro-N-[[[5-(2,4-dimethylphenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



Cl

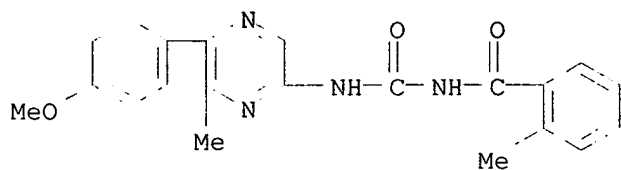
RN 69816-73-5 CAPLUS

CN Benzamide, 2-methyl-N-[[[6-methyl-5-[3-(trifluoromethyl)phenyl]pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)

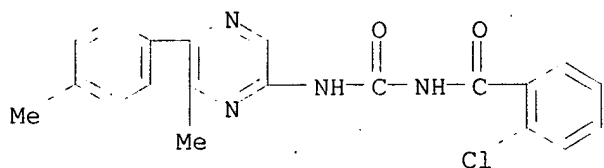


RN 69816-74-6 CAPLUS

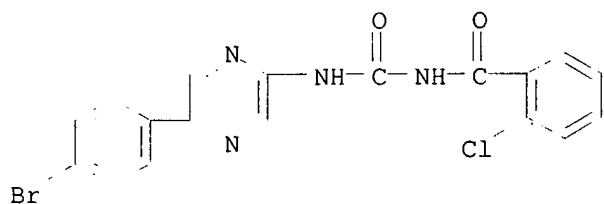
CN Benzamide, N-[[[5-(4-methoxyphenyl)-6-methylpyrazinyl]amino]carbonyl]-2-methyl- (9CI) (CA INDEX NAME)



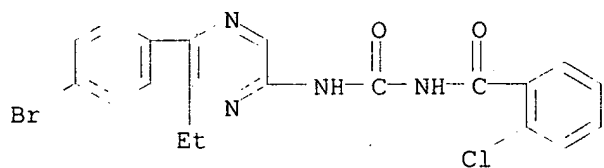
RN 69816-75-7 CAPLUS  
 CN Benzamide, 2-chloro-N-[[[6-methyl-5-(4-methylphenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



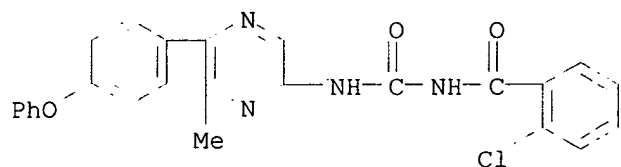
RN 69816-76-8 CAPLUS  
 CN Benzamide, N-[[[5-(4-bromophenyl)pyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)



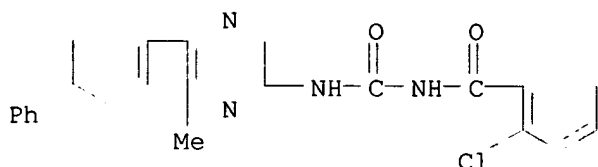
RN 69816-77-9 CAPLUS  
 CN Benzamide, N-[[[5-(4-bromophenyl)-6-ethylpyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)



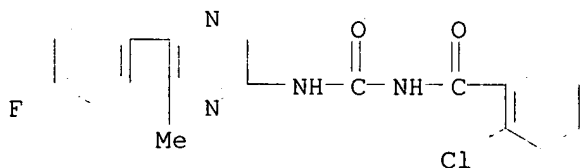
RN 69816-78-0 CAPLUS  
 CN Benzamide, 2-chloro-N-[[[6-methyl-5-(4-phenoxyphenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



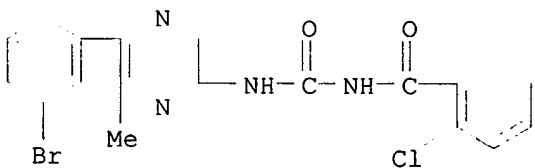
RN 69816-79-1 CAPLUS  
 CN Benzamide, N-[[[5-[1,1'-biphenyl]-4-yl-6-methylpyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)



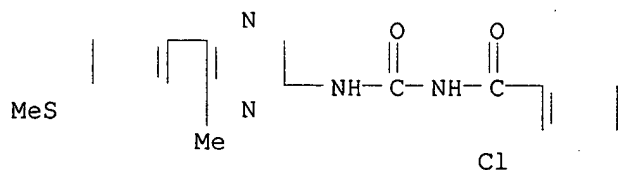
RN 69816-80-4 CAPLUS  
 CN Benzamide, 2-chloro-N-[[[5-(4-fluorophenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



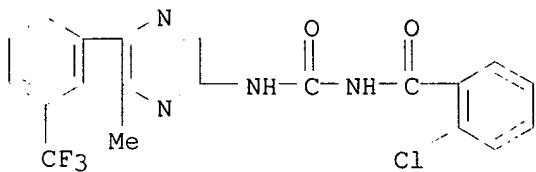
RN 69816-81-5 CAPLUS  
 CN Benzamide, N-[[[5-(3-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)



RN 69816-83-7 CAPLUS  
 CN Benzamide, 2-chloro-N-[[[6-methyl-5-[4-(methylthio)phenyl]pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



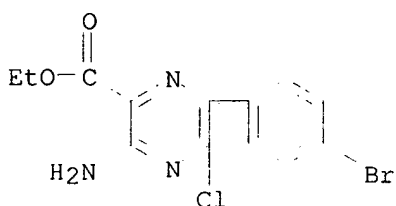
RN 69816-84-8 CAPLUS  
 CN Benzamide, 2-chloro-N-[[[6-methyl-5-[3-(trifluoromethyl)phenyl]pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



IT 69816-42-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and sapon. of)

RN 69816-42-8 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-6-(4-bromophenyl)-5-chloro-, ethyl ester  
(9CI) (CA INDEX NAME)

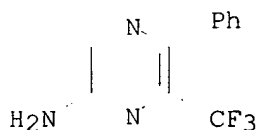
IT 69816-39-3P 69816-85-9P 69816-86-0P

69816-87-1P

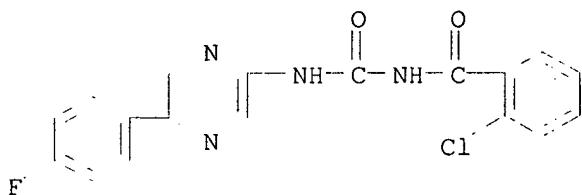
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

RN 69816-39-3 CAPLUS

CN Pyrazinamine, 5-phenyl-6-(trifluoromethyl)- (9CI) (CA INDEX NAME)

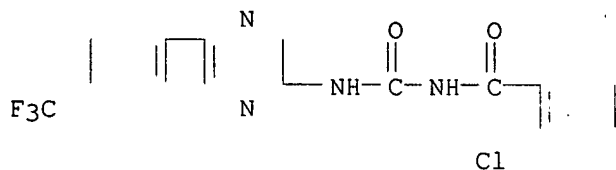


RN 69816-85-9 CAPLUS

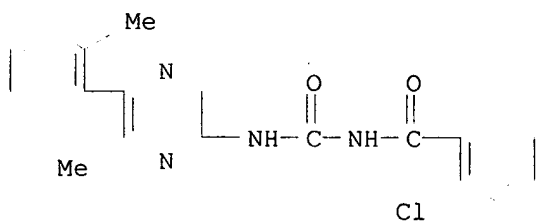
CN Benzamide, 2-chloro-N-[[[5-(4-fluorophenyl)pyrazinyl]amino]carbonyl]-  
(9CI) (CA INDEX NAME)

RN 69816-86-0 CAPLUS

CN Benzamide, 2-chloro-N-[[[5-[4-(trifluoromethyl)phenyl]pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



RN 69816-87-1 CAPLUS  
 CN Benzamide, 2-chloro-N-[[[6-methyl-5-(2-methylphenyl)pyrazinyl]amino]carbon  
 yl]- (9CI) (CA INDEX NAME)



L24 ANSWER 2 OF 145 CAPLUS COPYRIGHT 2001 ACS DUPLICATE 2  
 ACCESSION NUMBER: 1980:620777 CAPLUS  
 DOCUMENT NUMBER: 93:220777  
 TITLE: Substituted 2-aminopyrazines  
 INVENTOR(S): Barnett, Charles J.; Emmick, Thomas L.; Hoying,  
 Richard C.  
 PATENT ASSIGNEE(S): Lilly, Eli, and Co., USA  
 SOURCE: U.S., 11 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

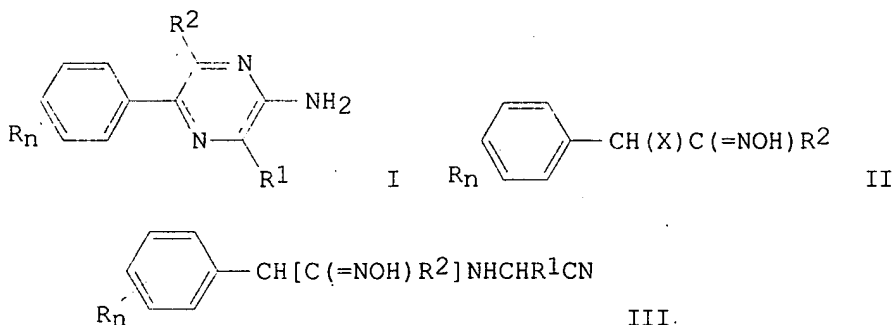
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4211870	A	19800708	US 1979-27630	19790406
<del>DK 8001442</del>	A	19801007	DK 1980-1442	19800402
FI 8001056	A	19801007	FI 1980-1056	19800402
AU 8057102	A1	19801009	AU 1980-57102	19800402
FR 2453159	A1	19801031	FR 1980-7457	19800402
BR 8002079	A	19801125	BR 1980-2079	19800402
ES 490287	A1	19810516	ES 1980-490287	19800402
CS 215055	P	19820730	CS 1980-2293	19800402
CA 1157860	A1	19831129	CA 1980-349061	19800402
BE 882608	A1	19801003	BE 1980-9771	19800403
EP 18144	A1	19801029	EP 1980-301085	19800403
R: DE, GB, NL, SE				
GB 2046751	A	19801119	GB 1980-11363	19800403
GB 2046751	A1	19801119		
DD 150057	C	19810812	DD 1980-220207	19800403
ZA 8002005	A	19811125	ZA 1980-2005	19800403
HU 26151	O	19830928	HU 1980-817	19800403
SU 932989	A3	19820530	SU 1980-2902455	19800404
RO 79384	P	19820625	RO 1980-100722	19800404
JP 55141473	A2	19801105	JP 1980-45114	19800405



PRIORITY APPLN. INFO.:  
GI

US 1979-27630

19790406



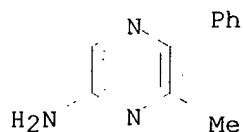
AB 2-Amino-5-phenylpyrazines I [ $n = 0, 1, 2$  ( $R = H, \text{halo}, \text{alkyl}, \text{CF}_3$ );  $R_1 = H, \text{alkyl}$ ;  $R_2 = \text{alkyl}$ ] were prep'd. from the resp. .alpha.-halobenzyl ketoximes II ( $X = \text{Cl}, \text{Br}$ ) and  $\text{H}_2\text{NCHR}_1\text{CN}$  ( $R_1$  same as above);  $\text{H}_2\text{NCHR}_1\text{CN}$  were treated with II and base to yield hydroxyimino-substituted aminoacetonitriles III, and the III were cyclized by polyphosphoric acid,  $\text{H}_3\text{PO}_4$ , or  $\text{H}_3\text{PO}_4\text{-P}_2\text{O}_5$  at 50-140.degree. to give I. Thus,  $\text{H}_2\text{NCH}_2\text{CN.HCl}$  was N-alkylated by 4- $\text{BrC}_6\text{H}_4\text{CHClC(=NOH)Me}$  and  $\text{Et}_3\text{N}$ , and the III ( $R_n = 4\text{-Br}$ ,  $R_2 = \text{Me}$ ,  $R_1 = \text{H}$ ) product was heated with polyphosphoric acid to give I ( $R_n = 4\text{-Br}$ ,  $R_2 = \text{Me}$ ,  $R_1 = \text{H}$ ).

IT 59489-36-0P 59489-75-7P 59489-78-0P  
59489-82-6P 69816-34-8P 69816-45-1P  
69816-53-1P 75411-09-5P 75411-10-8P  
75411-11-9P 75411-12-0P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

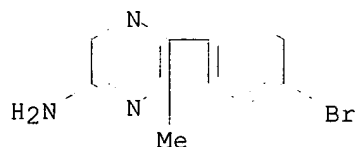
RN 59489-36-0 CAPLUS

CN Pyrazinamine, 6-methyl-5-phenyl- (9CI) (CA INDEX NAME)



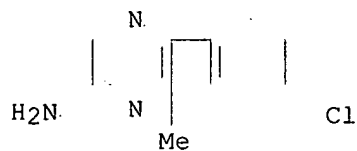
RN 59489-75-7 CAPLUS

CN Pyrazinamine, 5-(4-bromophenyl)-6-methyl- (9CI) (CA INDEX NAME)

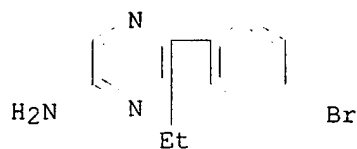


RN 59489-78-0 CAPLUS

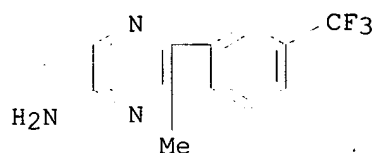
CN Pyrazinamine, 5-(4-chlorophenyl)-6-methyl- (9CI) (CA INDEX NAME)



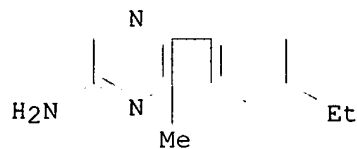
RN 59489-82-6 CAPLUS  
 CN Pyrazinamine, 5-(4-bromophenyl)-6-ethyl- (9CI) (CA INDEX NAME)



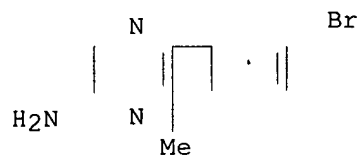
RN 69816-34-8 CAPLUS  
 CN Pyrazinamine, 6-methyl-5-[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



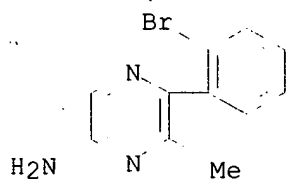
RN 69816-45-1 CAPLUS  
 CN Pyrazinamine, 5-(4-ethylphenyl)-6-methyl- (9CI) (CA INDEX NAME)



RN 69816-53-1 CAPLUS  
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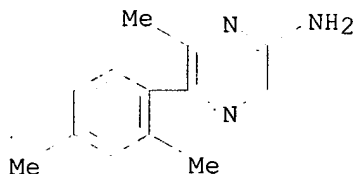


RN 75411-09-5 CAPLUS  
 CN Pyrazinamine, 5-(2-bromophenyl)-6-methyl- (9CI) (CA INDEX NAME)



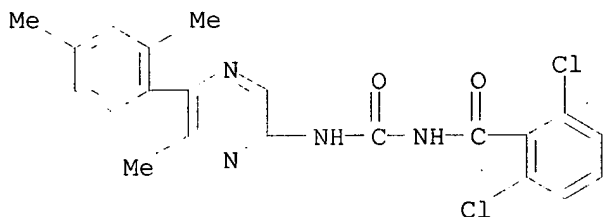
RN 75411-10-8 CAPLUS

CN Pyrazinamine, 5-(2,4-dimethylphenyl)-6-methyl- (9CI) (CA INDEX NAME)



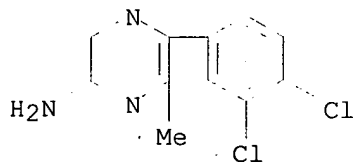
RN 75411-11-9 CAPLUS

CN Benzamide, 2,6-dichloro-N-[[[5-(2,4-dimethylphenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



RN 75411-12-0 CAPLUS

CN Pyrazinamine, 5-(3,4-dichlorophenyl)-6-methyl- (9CI) (CA INDEX NAME)



L24 ANSWER 3 OF 145 CAPLUS COPYRIGHT 2001 ACS

DUPLICATE 3

ACCESSION NUMBER: 1979:540598 CAPLUS

DOCUMENT NUMBER: 91:140598

TITLE: 1-(Substituted benzoyl)-3-(substituted pyrazinyl)ureas

INVENTOR(S): Miesel, John L.

PATENT ASSIGNEE(S): Lilly, Eli, and Co., USA

SOURCE: U.S., 19 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 4

PATENT INFORMATION:

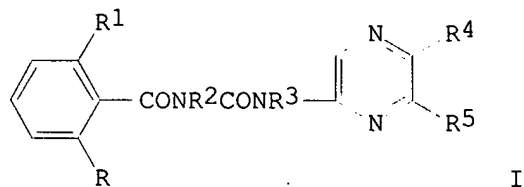
Searched by Barb O'Bryen, STIC 308-4291

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4160834	A	19790710	US 1977-861733	19771219
AT 7705635	A	19800615	AT 1977-5635	19770729
AT 360800	B	19810126		

PRIORITY APPLN. INFO.:

US 1974-507492	19740919
US 1975-595904	19750714
US 1977-775813	19770309
AT 1975-7146	19750917

GI



AB Adding benzoyl isocyanates to aminopyrazines gave ureas I [R, R1 (same or different) = halo, Me, CF3; R2, R3 (same or different) = H, alkanoyl, alkoxy, carbonyl; R4 = H, halo, alkyl, cycloalkyl, haloalkyl, NO2, cyano, naphthyl, (CH2)nC6H4Zm (n = 0, 1; Z = halo, haloalkyl, alkyl, alkoxy, alkylthio, alkylsulfonyl, NO2, cyano, Ph; m = 0, 1, 2, 3.), XC6H4Zm (X = O, S, SO2; Z and m as above); R5 = H, halo, Me, Et, cyano, haloalkyl], which were insecticidal. Thus, stirring 2-amino-5-chloropyrazine in cold EtOAc with 2,6-Cl2C6H3CONCO overnight gave I (R = R1 = R4 = Cl, R2 = R3 = R5 = H).

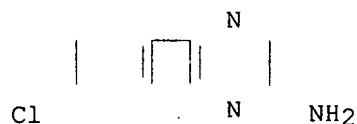
IT 59489-72-4 59489-73-5 59489-74-6  
 59489-75-7 59489-77-9 59489-78-0  
 59489-79-1 59489-80-4 59489-82-6  
 69816-34-8 69816-47-3 69816-49-5  
 69816-50-8 69816-53-1 69816-55-3  
 69816-56-4 71544-64-4 71544-65-5  
 71544-66-6 71544-67-7 71544-68-8  
 71553-78-1

RL: RCT (Reactant)

(addn. reaction of, with benzoyl isocyanate deriv.)

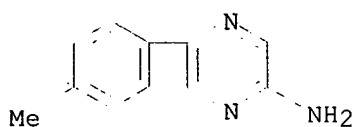
RN 59489-72-4 CAPLUS

CN Pyrazinamine, 5-(4-chlorophenyl)- (9CI) (CA INDEX NAME)

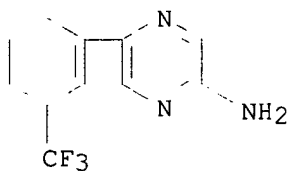


RN 59489-73-5 CAPLUS

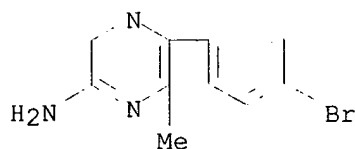
CN Pyrazinamine, 5-(4-methylphenyl)- (9CI) (CA INDEX NAME)

*proviso*

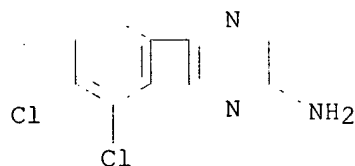
RN 59489-74-6 CAPLUS  
 CN Pyrazinamine, 5-[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



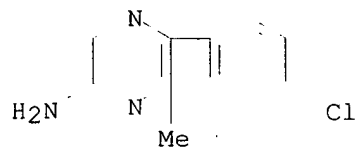
RN 59489-75-7 CAPLUS  
 CN Pyrazinamine, 5-(4-bromophenyl)-6-methyl- (9CI) (CA INDEX NAME)



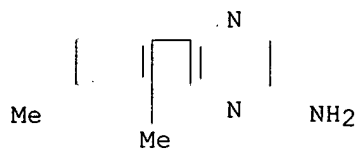
RN 59489-77-9 CAPLUS  
 CN Pyrazinamine, 5-(3,4-dichlorophenyl)- (9CI) (CA INDEX NAME)



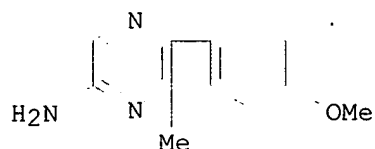
RN 59489-78-0 CAPLUS  
 CN Pyrazinamine, 5-(4-chlorophenyl)-6-methyl- (9CI) (CA INDEX NAME)



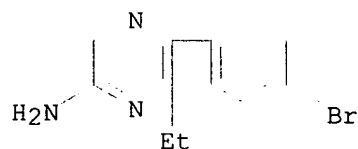
RN 59489-79-1 CAPLUS  
 CN Pyrazinamine, 5-(2,4-dimethylphenyl)- (9CI) (CA INDEX NAME)



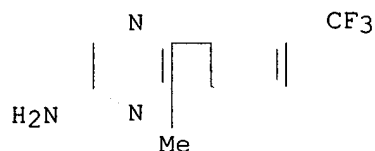
RN 59489-80-4 CAPLUS  
 CN Pyrazinamine, 5-(4-methoxyphenyl)-6-methyl- (9CI) (CA INDEX NAME)



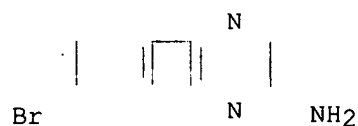
RN 59489-82-6 CAPLUS  
 CN Pyrazinamine, 5-(4-bromophenyl)-6-ethyl- (9CI) (CA INDEX NAME)



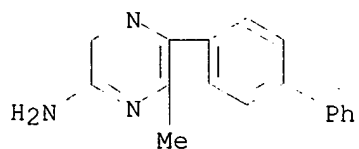
RN 69816-34-8 CAPLUS  
 CN Pyrazinamine, 6-methyl-5-[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



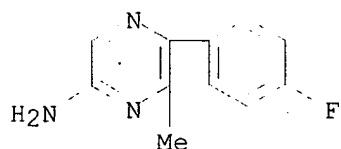
RN 69816-47-3 CAPLUS  
 CN Pyrazinamine, 5-(4-bromophenyl)- (9CI) (CA INDEX NAME)



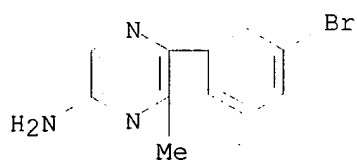
RN 69816-49-5 CAPLUS  
 CN Pyrazinamine, 5-[1,1'-biphenyl]-4-yl-6-methyl- (9CI) (CA INDEX NAME)



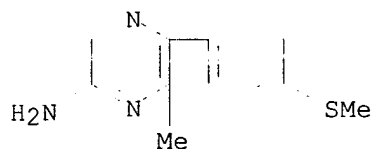
RN 69816-50-8 CAPLUS  
 CN Pyrazinamine, 5-(4-fluorophenyl)-6-methyl- (9CI) (CA INDEX NAME)



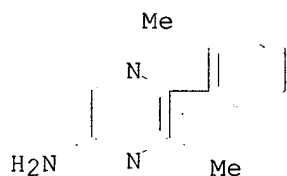
RN 69816-53-1 CAPLUS  
 CN Pyrazinamine, 5-(3-bromophenyl)-6-methyl- (9CI) (CA INDEX NAME)



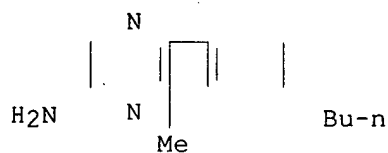
RN 69816-55-3 CAPLUS  
 CN Pyrazinamine, 6-methyl-5-[4-(methylthio)phenyl]- (9CI) (CA INDEX NAME)



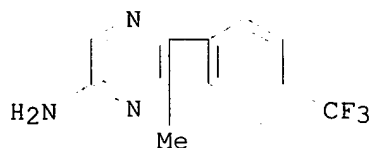
RN 69816-56-4 CAPLUS  
 CN Pyrazinamine, 6-methyl-5-(2-methylphenyl)- (9CI) (CA INDEX NAME)



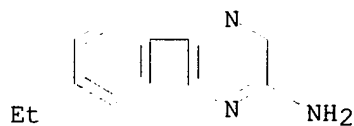
RN 71544-64-4 CAPLUS  
 CN Pyrazinamine, 5-(4-butylphenyl)-6-methyl- (9CI) (CA INDEX NAME)



RN 71544-65-5 CAPLUS  
 CN Pyrazinamine, 6-methyl-5-[4-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



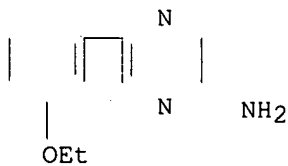
RN 71544-66-6 CAPLUS  
 CN Pyrazinamine, 5-(4-ethylphenyl)- (9CI) (CA INDEX NAME)



RN 71544-67-7 CAPLUS  
 CN Pyrazinamine, 5-[4-(1,1-dimethylethyl)phenyl]- (9CI) (CA INDEX NAME)

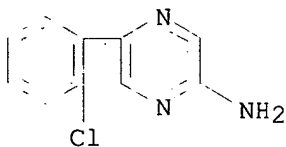


RN 71544-68-8 CAPLUS  
 CN Pyrazinamine, 5-(3-ethoxyphenyl)- (9CI) (CA INDEX NAME)

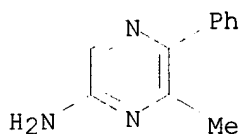


RN 71553-78-1 CAPLUS  
 CN Pyrazinamine, 5-(2-chlorophenyl)- (9CI) (CA INDEX NAME)

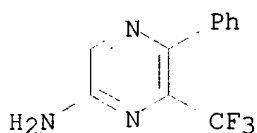




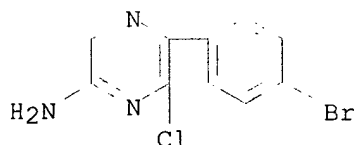
IT 59489-36-0P 69816-39-3P 69816-44-0P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and addn. reaction of, with benzoyl isocyanate deriv.)  
 RN 59489-36-0 CAPLUS  
 CN Pyrazinamine, 6-methyl-5-phenyl- (9CI) (CA INDEX NAME)



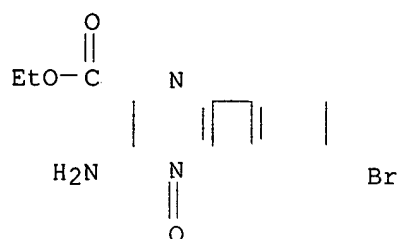
RN 69816-39-3 CAPLUS  
 CN Pyrazinamine, 5-phenyl-6-(trifluoromethyl)- (9CI) (CA INDEX NAME)



RN 69816-44-0 CAPLUS  
 CN Pyrazinamine, 5-(4-bromophenyl)-6-chloro- (9CI) (CA INDEX NAME)



IT 69816-40-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and chlorination of, deoxidn. in)  
 RN 69816-40-6 CAPLUS  
 CN Pyrazinecarboxylic acid, 3-amino-6-(4-bromophenyl)-, ethyl ester, 4-oxide  
 (9CI) (CA INDEX NAME)

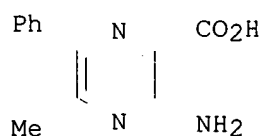


IT 5284-16-2P 69816-43-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and decarboxylation of)

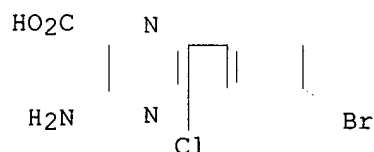
RN 5284-16-2 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-5-methyl-6-phenyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 69816-43-9 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-6-(4-bromophenyl)-5-chloro- (9CI) (CA INDEX NAME)

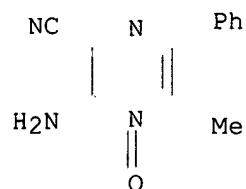


IT 59489-34-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and deoxidn. of)

RN 59489-34-8 CAPLUS

CN Pyrazinecarbonitrile, 3-amino-5-methyl-6-phenyl-, 4-oxide (9CI) (CA INDEX NAME)

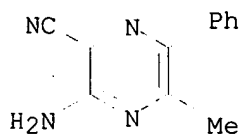


IT 59489-35-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and hydrolysis of)

RN 59489-35-9 CAPLUS

CN Pyrazinecarbonitrile, 3-amino-5-methyl-6-phenyl- (9CI) (CA INDEX NAME)

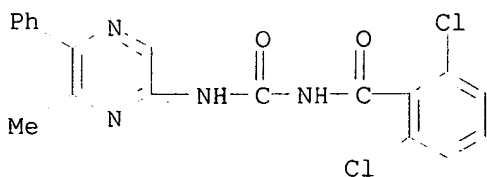


IT 59489-52-0P 59489-55-3P 59489-57-5P  
 59489-59-7P 59489-62-2P 59489-63-3P  
 59489-64-4P 59489-65-5P 59489-69-9P  
 65234-72-2P 69816-33-7P 71544-70-2P  
 71544-71-3P 71544-73-5P 71544-74-6P  
 71544-75-7P 71544-76-8P 71544-77-9P  
 71544-78-0P 71544-79-1P 71544-80-4P  
 71553-74-7P 71553-75-8P 71553-76-9P  
 71553-77-0P 71562-67-9P

RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (prepn. and insecticidal activity of)

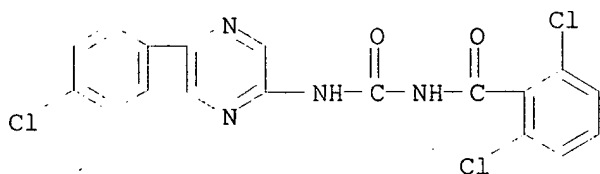
RN 59489-52-0 CAPLUS

CN Benzamide, 2,6-dichloro-N-[[ (6-methyl-5-phenylpyrazinyl) amino] carbonyl]-  
 (9CI) (CA INDEX NAME)



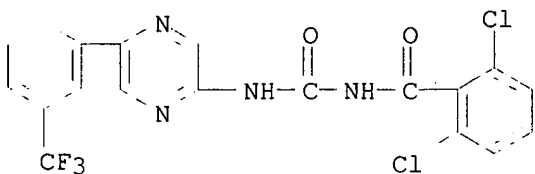
RN 59489-55-3 CAPLUS

CN Benzamide, 2,6-dichloro-N-[[ [5-(4-chlorophenyl)pyrazinyl] amino] carbonyl]-  
 (9CI) (CA INDEX NAME)

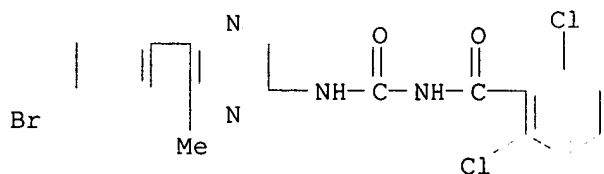


RN 59489-57-5 CAPLUS

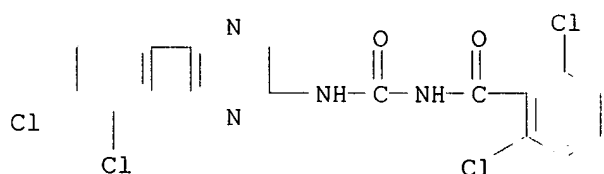
CN Benzamide, 2,6-dichloro-N-[[ [5-[3-(trifluoromethyl)phenyl]pyrazinyl] amino] carbonyl]- (9CI) (CA INDEX NAME)



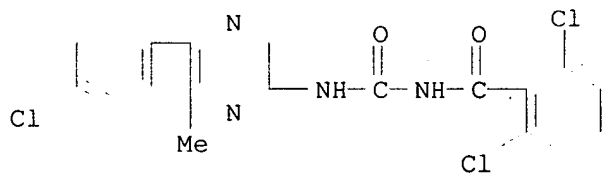
RN 59489-59-7 CAPLUS  
 CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)



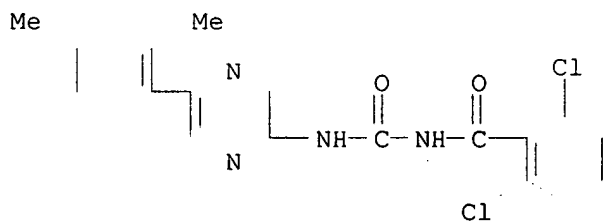
RN 59489-62-2 CAPLUS  
 CN Benzamide, 2,6-dichloro-N-[[[5-(3,4-dichlorophenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



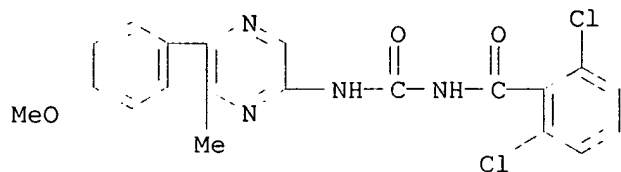
RN 59489-63-3 CAPLUS  
 CN Benzamide, 2,6-dichloro-N-[[[5-(4-chlorophenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



RN 59489-64-4 CAPLUS  
 CN Benzamide, 2,6-dichloro-N-[[[5-(2,4-dimethylphenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)

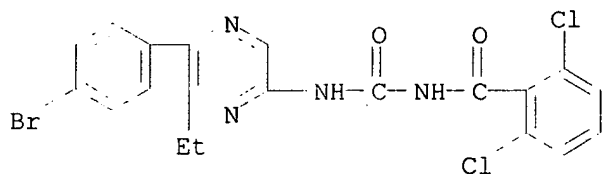


RN 59489-65-5 CAPLUS  
 CN Benzamide, 2,6-dichloro-N-[[[5-(4-methoxyphenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



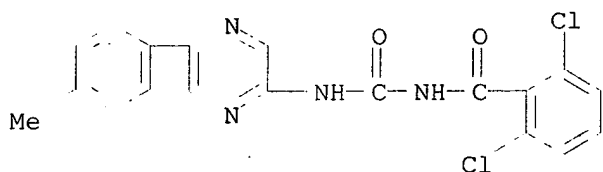
RN 59489-69-9 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-ethylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)



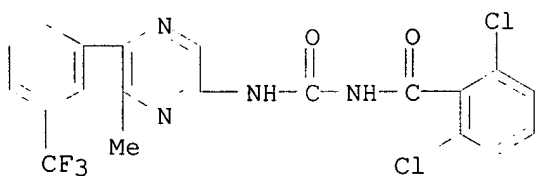
RN 65234-72-2 CAPLUS

CN Benzamide, 2,6-dichloro-N-[[[5-(4-methylphenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



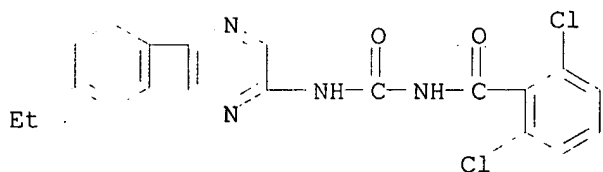
RN 69816-33-7 CAPLUS

CN Benzamide, 2,6-dichloro-N-[[[6-methyl-5-[3-(trifluoromethyl)phenyl]pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)

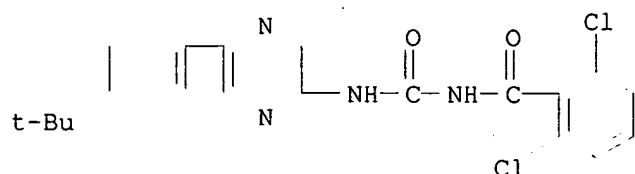


RN 71544-70-2 CAPLUS

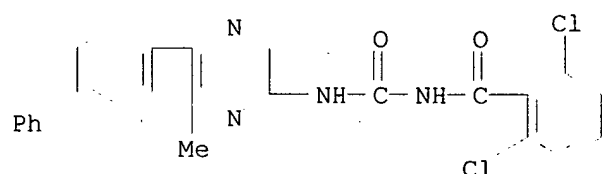
CN Benzamide, 2,6-dichloro-N-[[[5-(4-ethylphenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



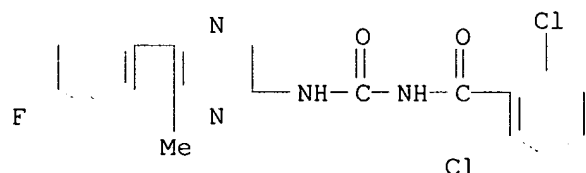
RN 71544-71-3 CAPLUS  
 CN Benzamide, 2,6-dichloro-N-[[[5-[4-(1,1-dimethylethyl)phenyl]pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



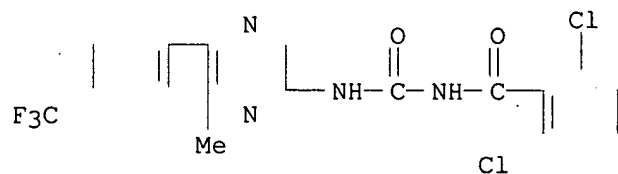
RN 71544-73-5 CAPLUS  
 CN Benzamide, N-[[[5-[1,1'-biphenyl]-4-yl-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)



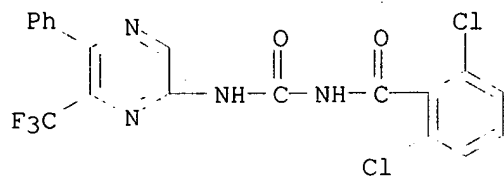
RN 71544-74-6 CAPLUS  
 CN Benzamide, 2,6-dichloro-N-[[[5-(4-fluorophenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



RN 71544-75-7 CAPLUS  
 CN Benzamide, 2,6-dichloro-N-[[[6-methyl-5-[4-(trifluoromethyl)phenyl]pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)

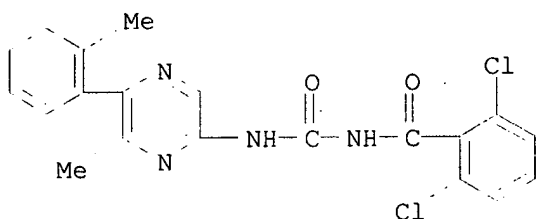


RN 71544-76-8 CAPLUS  
 CN Benzamide, 2,6-dichloro-N-[[[5-phenyl-6-(trifluoromethyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



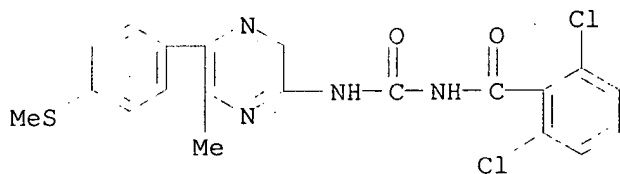
RN 71544-77-9 CAPLUS

CN Benzamide, 2,6-dichloro-N-[[[6-methyl-5-(2-methylphenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



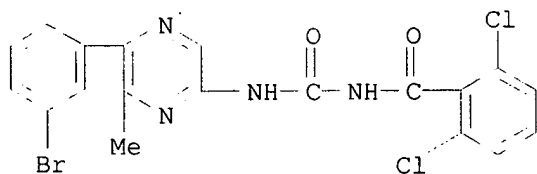
RN 71544-78-0 CAPLUS

CN Benzamide, 2,6-dichloro-N-[[[6-methyl-5-[4-(methylthio)phenyl]pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



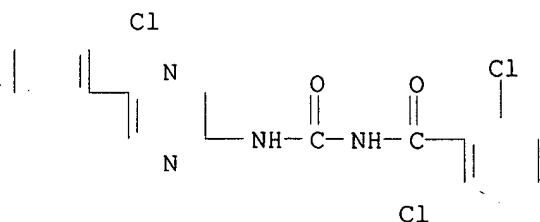
RN 71544-79-1 CAPLUS

CN Benzamide, N-[[[5-(3-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)

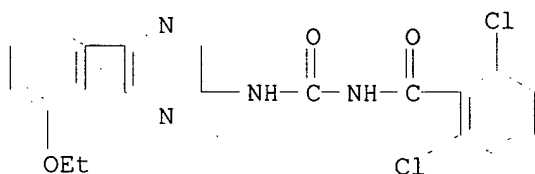


RN 71544-80-4 CAPLUS

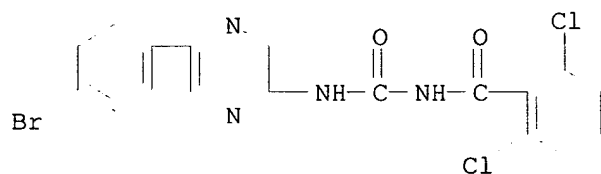
CN Benzamide, 2,6-dichloro-N-[[[5-(2-chlorophenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



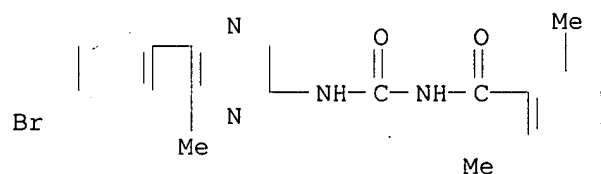
RN 71553-74-7 CAPLUS  
 CN Benzamide, 2,6-dichloro-N-[[[5-(3-ethoxyphenyl)pyrazinyl]amino]carbonyl]-  
 (9CI) (CA INDEX NAME)



RN 71553-75-8 CAPLUS  
 CN Benzamide, N-[[[5-(4-bromophenyl)pyrazinyl]amino]carbonyl]-2,6-dichloro-  
 (9CI) (CA INDEX NAME)

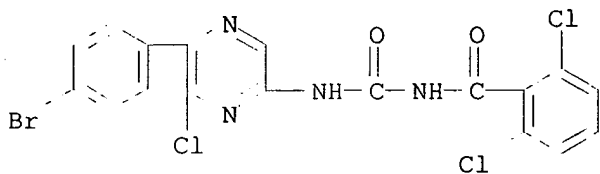


RN 71553-76-9 CAPLUS  
 CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-  
 dimethyl- (9CI) (CA INDEX NAME)



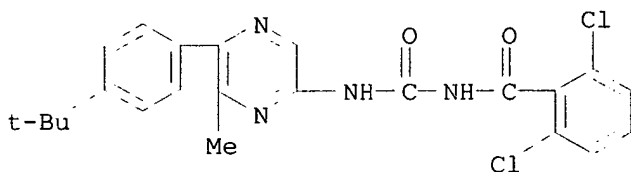
RN 71553-77-0 CAPLUS  
 CN Benzamide, N-[[[5-(4-bromophenyl)-6-chloropyrazinyl]amino]carbonyl]-2,6-  
 dichloro- (9CI) (CA INDEX NAME)





RN 71562-67-9 CAPLUS

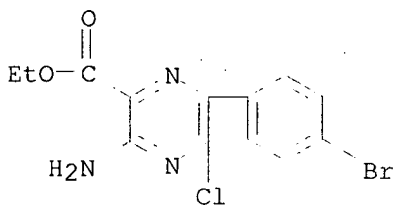
CN Benzamide, 2,6-dichloro-N-[[[5-[4-(1,1-dimethylethyl)phenyl]-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



IT 69816-42-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and sapon. of)

RN 69816-42-8 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-6-(4-bromophenyl)-5-chloro-, ethyl ester  
(9CI) (CA INDEX NAME)

L24 ANSWER 4 OF 145 CAPLUS COPYRIGHT 2001 ACS

DUPLICATE 4

ACCESSION NUMBER: 1978:509584 CAPLUS

DOCUMENT NUMBER: 89:109584

TITLE: Insecticidal 1-(substituted benzoyl)-3-(substituted  
pyrazinyl)ureas

INVENTOR(S): Miesel, John Louis

PATENT ASSIGNEE(S): Lilly, Eli, and Co., USA

SOURCE: U.S., 15 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 4

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4083977	A	19780411	US 1976-742948	19761118
US 3984137	A	19761005	US 1975-595504	19750714
AT 7705635	A	19800615	AT 1977-5635	19770729
AT 360800	B	19810126		
PRIORITY APPLN. INFO.:			US 1974-507492	19740919

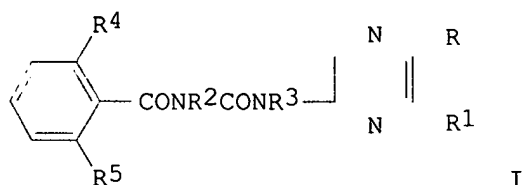
US 1975-595504

19750714

AT 1975-7146

19750917

GI



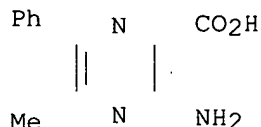
AB The title compds. I ( $R = R1 = H$ ,  $RR1 =$  unsubstituted, halo, C1-6 alkyl, C3-6 cycloalkyl  $NO_2$ , CN, C1-4 haloalkyl-substituted benzo;  $R2, R3 = H$ , C1-4 alkanoyl, C1-3 alkoxy-carbonyl;  $R4, R5 =$  halo, Me, F3C) were prepd. Thus, 2-amino-5-chloropyrazine (II) was treated with 2,6- $Cl_2C_6H_4CONCO$  to give 3-(5-chloro-2-pyrazinyl)-1-(2,6-dichlorobenzoyl)urea (III). II was prepd. by chlorination of Me 2-amino-3-pyrazinecarboxylate followed by hydrolysis and decarboxylation. At 50 ppm III completely controlled southern armyworm after 4 days.

IT 5284-16-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation) (prepn. and decarboxylation of)

RN 5284-16-2 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-5-methyl-6-phenyl- (7CI, 8CI, 9CI) (CA INDEX NAME)

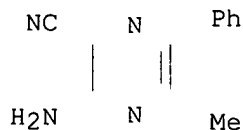


IT 59489-35-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation) (prepn. and hydrolysis of)

RN 59489-35-9 CAPLUS

CN Pyrazinecarbonitrile, 3-amino-5-methyl-6-phenyl- (9CI) (CA INDEX NAME)



IT 59489-52-0P 59489-55-3P 59489-57-5P

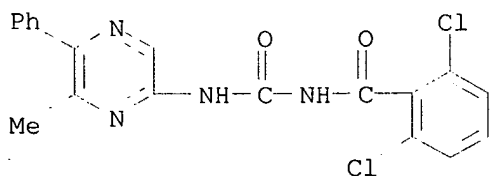
59489-59-7P 59489-62-2P 59489-63-3P

59489-64-4P 59489-69-9P 65234-72-2P

RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation) (prepn. and insecticidal activity of)

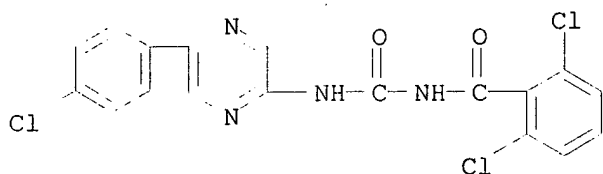
RN 59489-52-0 CAPLUS

CN Benzamide, 2,6-dichloro-N-[[ (6-methyl-5-phenylpyrazinyl) amino] carbonyl]- (9CI) (CA INDEX NAME)



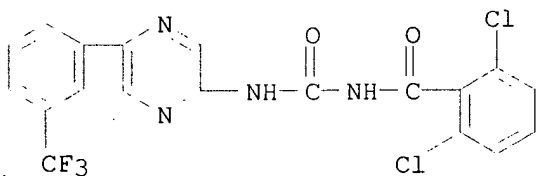
RN 59489-55-3 CAPLUS

CN Benzamide, 2,6-dichloro-N-[[5-(4-chlorophenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



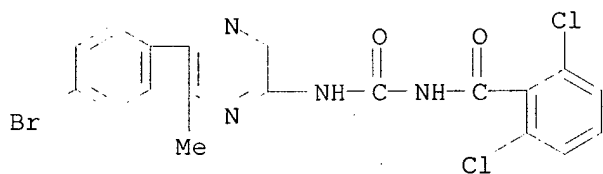
RN 59489-57-5 CAPLUS

CN Benzamide, 2,6-dichloro-N-[[5-[3-(trifluoromethyl)phenyl]pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



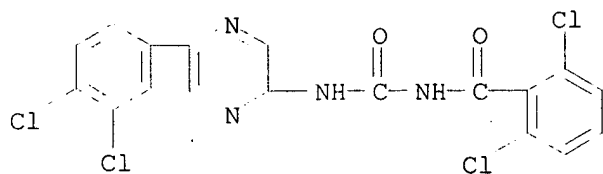
RN 59489-59-7 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)

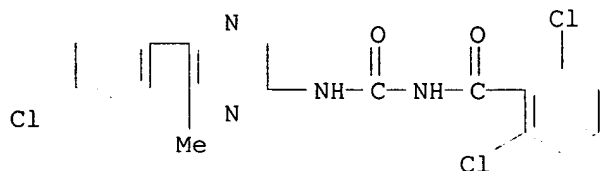


RN 59489-62-2 CAPLUS

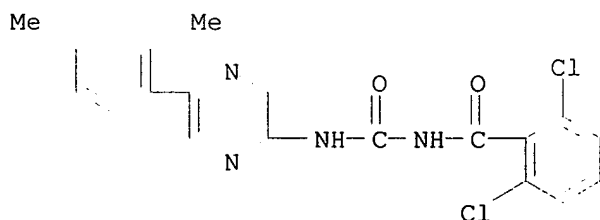
CN Benzamide, 2,6-dichloro-N-[[[5-(3,4-dichlorophenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



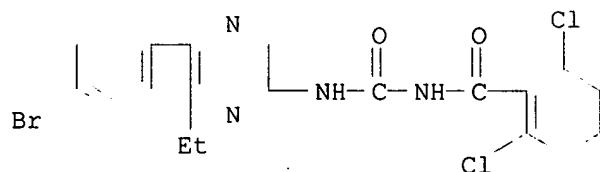
RN 59489-63-3 CAPLUS  
 CN Benzamide, 2,6-dichloro-N-[[[5-(4-chlorophenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



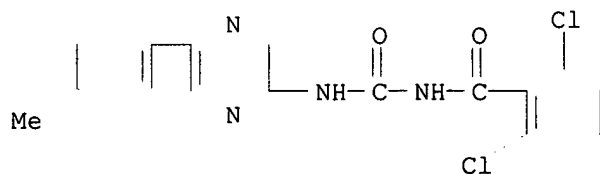
RN 59489-64-4 CAPLUS  
 CN Benzamide, 2,6-dichloro-N-[[[5-(2,4-dimethylphenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



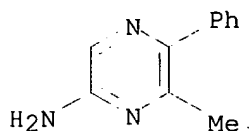
RN 59489-69-9 CAPLUS  
 CN Benzamide, N-[[[5-(4-bromophenyl)-6-ethylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)



RN 65234-72-2 CAPLUS  
 CN Benzamide, 2,6-dichloro-N-[[[5-(4-methylphenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



IT **59489-36-0P**  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and reaction with dichlorobenzoyl isocyanate)  
 RN 59489-36-0 CAPLUS  
 CN Pyrazinamine, 6-methyl-5-phenyl- (9CI) (CA INDEX NAME)

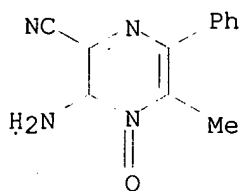


IT 59489-34-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and redn. of)

RN 59489-34-8 CAPLUS

CN Pyrazinecarbonitrile, 3-amino-5-methyl-6-phenyl-, 4-oxide (9CI) (CA INDEX NAME)

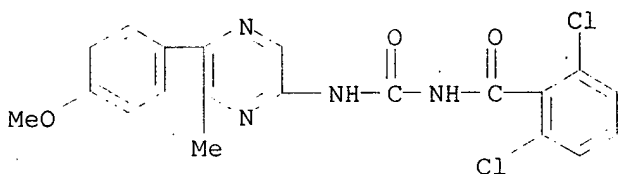


IT 59489-65-5P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

RN 59489-65-5 CAPLUS

CN Benzamide, 2,6-dichloro-N-[[[5-(4-methoxyphenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



IT 59489-72-4 59489-73-5 59489-74-6

59489-75-7 59489-77-9 59489-78-0

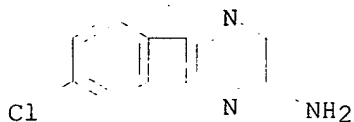
59489-79-1 59489-80-4 59489-82-6

RL: RCT (Reactant)

(reaction of, with dichlorobenzoyl isocyanate)

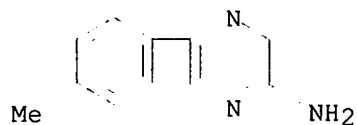
RN 59489-72-4 CAPLUS

CN Pyrazinamine, 5-(4-chlorophenyl)- (9CI) (CA INDEX NAME)

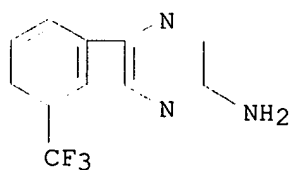


RN 59489-73-5 CAPLUS

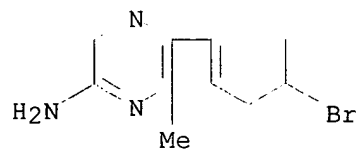
CN Pyrazinamine, 5-(4-methylphenyl)- (9CI) (CA INDEX NAME)



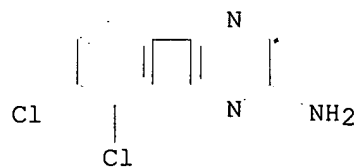
RN 59489-74-6 CAPLUS  
 CN Pyrazinamine, 5-[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



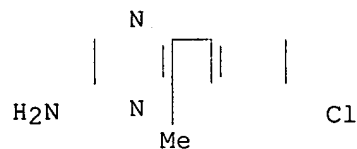
RN 59489-75-7 CAPLUS  
 CN Pyrazinamine, 5-(4-bromophenyl)-6-methyl- (9CI) (CA INDEX NAME)



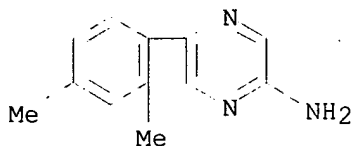
RN 59489-77-9 CAPLUS  
 CN Pyrazinamine, 5-(3,4-dichlorophenyl)- (9CI) (CA INDEX NAME)



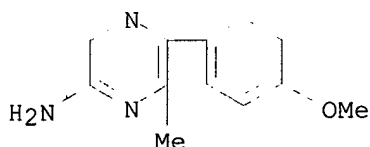
RN 59489-78-0 CAPLUS  
 CN Pyrazinamine, 5-(4-chlorophenyl)-6-methyl- (9CI) (CA INDEX NAME)



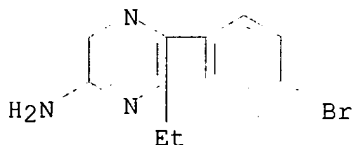
RN 59489-79-1 CAPLUS  
 CN Pyrazinamine, 5-(2,4-dimethylphenyl)- (9CI) (CA INDEX NAME)



RN 59489-80-4 CAPLUS  
 CN Pyrazinamine, 5-(4-methoxyphenyl)-6-methyl- (9CI) (CA INDEX NAME)



RN 59489-82-6 CAPLUS  
 CN Pyrazinamine, 5-(4-bromophenyl)-6-ethyl- (9CI) (CA INDEX NAME)



~~124~~ ANSWER 5 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 2001:472472 CAPLUS  
 DOCUMENT NUMBER: 135:81972  
 TITLE: Formulations of adenosine A1 agonists  
 INVENTOR(S): Bountra, Charanjit; Clayton, Nicholas Maughan; Naylor, Alan  
 PATENT ASSIGNEE(S): Glaxo Group Limited, UK  
 SOURCE: PCT Int. Appl., 32 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001045684	A2	20010628	WO 2000-GB4888	20001219

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, VZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: GB 1999-30079 A 19991220

AB A method of treating conditions assocd. with pain and alleviating the symptoms assocd. with it comprises administering to a mammal an adenosine A1 agonist or a salt or solvate and a sodium channel blocker. The present

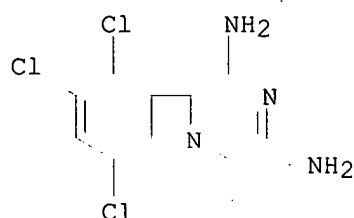
invention also provides pharmaceutical formulations and patient packs comprising the combinations. Thus, (2S,3S,4R,5R)-2-(5-tert-butyl-[1,3,4]oxadiazol-2-yl)-5-[6-(4-chloro-2-fluorophenylamino)purin-9-yl]tetrahydrofuran-3,4-diol was prepd. in a series of steps by the reaction of (3aS,4S,6R,6aR)-6-(6-chloropurin-9-yl)-2,2-dimethyltetrahydrofuro[3,4-d][1,3]dioxole-4-carboxylic acid with 2,2-dimethylpropionic acid hydrazide followed by the cyclization of the resulting compd., and subsequent treatment with 4-chloro-2-fluoroaniline and deprotection.

IT 212778-82-0 259828-60-9

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(formulations of adenosine A1 agonists)

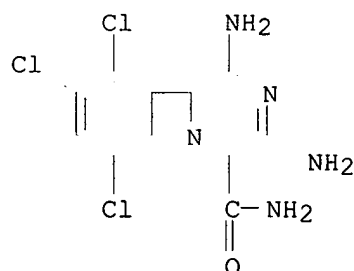
RN 212778-82-0 CAPLUS

CN 2,6-Pyrazinediamine, 3-(2,3,5-trichlorophenyl)- (9CI) (CA INDEX NAME)



RN 259828-60-9 CAPLUS

CN Pyrazinecarboxamide, 3,5-diamino-6-(2,3,5-trichlorophenyl)- (9CI) (CA INDEX NAME)



24 ANSWER 6 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 2001:152682 CAPLUS

DOCUMENT NUMBER: 134:207809

TITLE: Preparation of spiroisindolinepiperidines, spiroisoquinolinepiperidines, spiroisobenzofuranpiperidines, and related compounds as neuropeptide Y antagonists.

INVENTOR(S): Fukami, Takehiro; Kanatani, Akio; Ishihara, Akane; Ishii, Yasuyuki; Takahashi, Toshiyuki; Haga, Yuji; Sakamoto, Toshihiro; Itoh, Takahiro

PATENT ASSIGNEE(S): Banyu Pharmaceutical Co., Ltd., Japan

SOURCE: PCT Int. Appl., 164 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

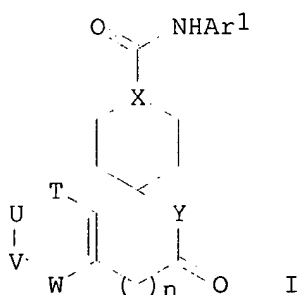
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:



PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001014376	A1	20010301	WO 2000-JP5427	20000811
W: AE, AG, AL, AM, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CN, CR, CU, CZ, DM, DZ, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KG, KR, KZ, LC, LK, LR, LT, LV, MA, MD, MG, MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, TJ, TM, TR, TT, UA, US, UZ, VN, YU, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
PRIORITY APPLN. INFO.:			JP 1999-233573	A 19990820
			JP 2000-137692	A 20000510
OTHER SOURCE(S):		MARPAT 134:207809		
GI				



AB Title compds. [I; Ar1 = (substituted) aryl, heteroaryl, QAr2; Ar2 = (substituted) aryl, heteroaryl; Q = bond, CO; T, U, V, W = N, (substituted) CH; X = N, CH; Y = (substituted) imino], were prepd. Thus, N-tert-butoxycarbonyl-4-piperidone was refluxed 3 h with PhCH2NH2 in PhMe to give a residue which was stirred with o-iodobenzoyl chloride and Et3N in PhMe at 80.degree. for 2 h to give N-benzyl-N-(1-tert-butoxycarbonyl-1,2,3,6-tetrahydropyridin-4-yl)-2-iodobenzamide. The latter was heated with Pd(OAc)2, Ph3P, K2CO3, and Et4NCl in MeCN at 80.degree. for 6 h to give 2-benzyl-1'-tert-butoxycarbonyl-1',6'-dihydrospiro[1H-isoindole-1,4'(5'H)-pyridine]-3(2H)-one. This was converted to N-(4-benzoylphenyl)-3-oxospiro[isoindoline-1,4'-piperidine]-1'-carboxamide, (II), which inhibited [125I]peptide YY binding to NPY Y5 receptors with IC50 = 1.2 nM. II drug formulations are given.

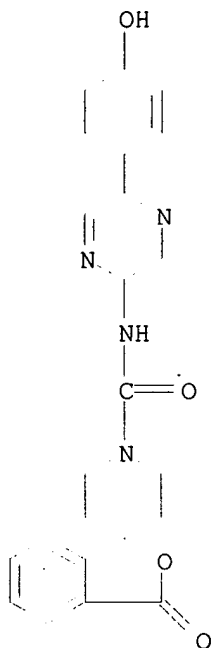
IT 328232-57-1P 328232-58-2P

RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

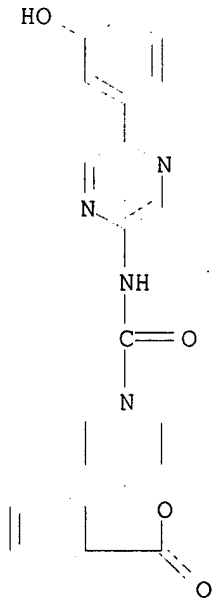
(prepn. of spiroisoindolinepiperidines, spiroisoquinolinepiperidines, spiroisobenzofuranpiperidines, and related compds. as neuropeptide Y antagonists)

RN 328232-57-1 CAPLUS

CN Spiro[isobenzofuran-1(3H),4'-piperidine]-1'-carboxamide,  
N-[5-(4-hydroxyphenyl)pyrazinyl]-3-oxo- (9CI) (CA INDEX NAME)

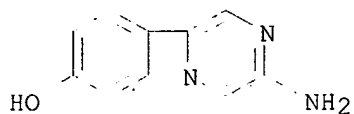


RN 328232-58-2 CAPLUS  
 CN Spiro[isobenzofuran-1(3H),4'-piperidine]-1'-carboxamide,  
 N-[5-(3-hydroxyphenyl)pyrazinyl]-3-oxo- (9CI) (CA INDEX NAME)



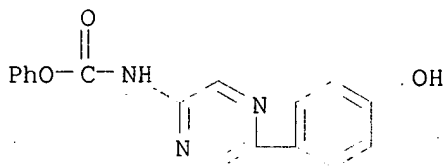
IT 204770-67-2P 328233-24-5P 328233-25-6P  
 328233-26-7P 328233-27-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of spiroisobenzofuranpiperidines, spiroisoquinolinepiperidines,  
 spiroisobenzofuranpiperidines, and related compds. as neuro peptide Y  
 antagonists)  
 RN 204770-67-2 CAPLUS

CN Phenol, 4-(5-aminopyrazinyl)- (9CI) (CA INDEX NAME)



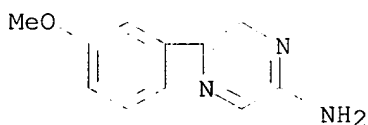
RN 328233-24-5 CAPLUS

CN Carbamic acid, [5-(4-hydroxyphenyl)pyrazinyl]-, phenyl ester (9CI) (CA INDEX NAME)



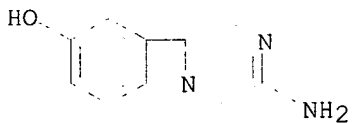
RN 328233-25-6 CAPLUS

CN Pyrazinamine, 5-(3-methoxyphenyl)- (9CI) (CA INDEX NAME)



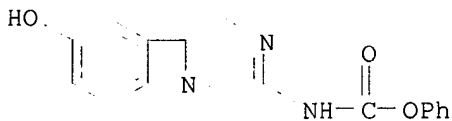
RN 328233-26-7 CAPLUS

CN Phenol, 3-(5-aminopyrazinyl)- (9CI) (CA INDEX NAME)



RN 328233-27-8 CAPLUS

CN Carbamic acid, [5-(3-hydroxyphenyl)pyrazinyl]-, phenyl ester (9CI) (CA INDEX NAME)



REFERENCE COUNT:

REFERENCE(S):

3

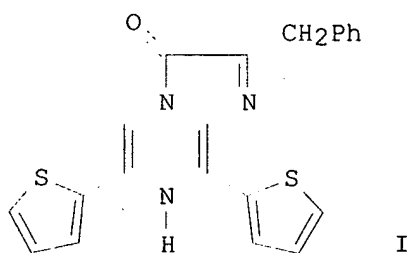
(1) Banyu Pharma Co Ltd; WO 0027845 A 2000 CAPLUS

(2) Hoffmann La Roche; WO 9929696 A 1999 CAPLUS

(3) Merck & Co Inc; EP 0615977 A 1994 CAPLUS

~~24~~ ANSWER 7 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 2001:246295 CAPLUS  
DOCUMENT NUMBER: 135:61171  
TITLE: Chemi- and bioluminescence of coelenterazine analogues  
with a conjugated group at the C-8 position  
AUTHOR(S): Wu, C.; Nakamura, H.; Murai, A.; Shimomura, O.  
CORPORATE SOURCE: Graduate School of Bioagricultural Sciences,  
Department of Applied Molecular Bioscience, Division  
of Biomodeling, Nagoya University, Nagoya, 464-8601,  
Japan  
SOURCE: Tetrahedron Lett. (2001), 42(16), 2997-3000  
CODEN: TELEAY; ISSN: 0040-4039  
PUBLISHER: Elsevier Science Ltd.  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
GI



AB The chemiluminescent compd. coelenterazine is involved in various bioluminescence reactions as the substrate, causing the luminescence with an emission peak in the range of 450-475 nm. Anticipating the introduction of a bathochromic shift of the luminescence, several new coelenterazine analogs, e.g. I, that have conjugated olefins or arom. groups at the 8-position of the imidazopyrazinone ring were synthesized. In the chemiluminescence reaction, the emission spectra of a majority of the compds. synthesized showed a bathochromic shift, giving an emission peak in the range of 520-580 nm. In the bioluminescence catalyzed by *Oplophorus luciferase*, the bithienyl analog of coelenterazine I emitted a moderate intensity of luminescence (5% of coelenterazine) with an emission max. at 528 nm, which was the longest wavelength of all the analogs tested.

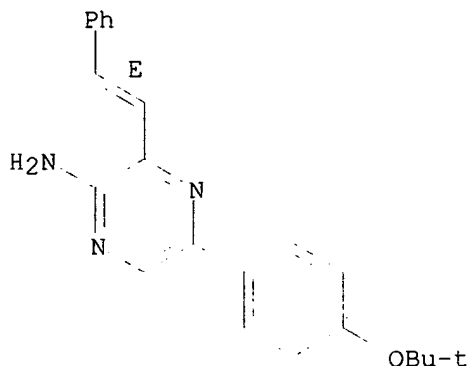
IT 344940-72-3P 344940-73-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(chemi- and bioluminescence of coelenterazine analogs with a conjugated group at the C-8 position)

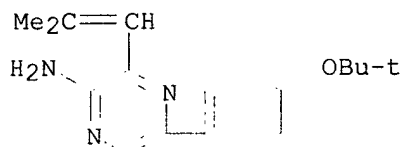
RN 344940-72-3 CAPLUS

CN Pyrazinamine, 5-[4-(1,1-dimethylethoxy)phenyl]-3-[(1E)-2-phenylethenyl]-  
(9CI) (CA INDEX NAME)

Double bond geometry as shown.



RN 344940-73-4 CAPLUS  
 CN Pyrazinamine, 5-[4-(1,1-dimethylethoxy)phenyl]-3-(2-methyl-1-propenyl)-  
 (9CI) (CA INDEX NAME)



REFERENCE COUNT: 7  
 REFERENCE(S): (2) Hori, K; Chem Commun 1973, P492 CAPLUS  
 (3) Inouye, S; Biochem Biophys Res Commun 1997, V233, P349 CAPLUS  
 (4) Nakamura, H; Synlett 1995, P1227 CAPLUS  
 (5) Nakamura, H; Tetrahedron Lett 1997, V38, P6405 CAPLUS  
 (6) Nakamura, H; Tetrahedron Lett 1998, V39, P301 CAPLUS  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

~~L24~~ ANSWER 8 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 2000:900621 CAPLUS  
 DOCUMENT NUMBER: 134:56683  
 TITLE: Preparation of nitrogen-containing heterocyclic derivatives as remedies for complications of diabetes based on protein kinase C inhibition  
 INVENTOR(S): Suzuki, Takayuki; Onda, Kenichi; Murakami, Takeshi; Negoro, Kenji; Yahiro, Kiyoshi; Maruyama, Tatsuya; Shimaya, Akiyoshi; Ohta, Mitsuaki  
 PATENT ASSIGNEE(S): Yamanouchi Pharmaceutical Co., Ltd., Japan  
 SOURCE: PCT Int. Appl., 62 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

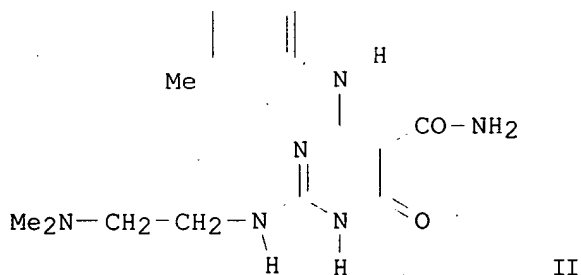
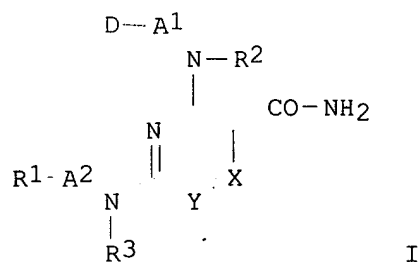
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000076980	A1	20001221	WO 2000-JP3768	20000609
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR,				

CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU,  
 ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU,  
 LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD,  
 SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU,  
 ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,  
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,  
 CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: JP 1999-163344 A 19990610  
 JP 1999-165217 A 19990611

OTHER SOURCE(S): MARPAT 134:56683

GI



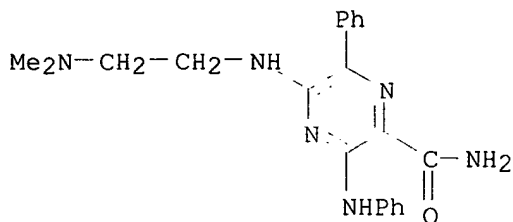
AB The title compds. I [Y and X together are N:N, C(R4):N, etc.; D = (un)substituted aryl, etc.; R1 = (un)substituted heteroaryl, etc.; A1, A2 = (un)substituted alkylene, etc.; R2, R3, R4 = H, OH, etc.; or R1A2NR3 = (un)substituted heteroaryl] are prepd. The title compd. II in vitro showed IC50 of 0.0049 .mu.mol against protein kinase C.

IT 313338-93-1P

RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (prepn. of nitrogen-contg. heterocyclic derivs. as remedies for complications of diabetes)

RN 313338-93-1 CAPLUS

CN Pyrazinecarboxamide, 5-[[2-(dimethylamino)ethyl]amino]-6-phenyl-3-(phenylamino)- (9CI) (CA INDEX NAME)

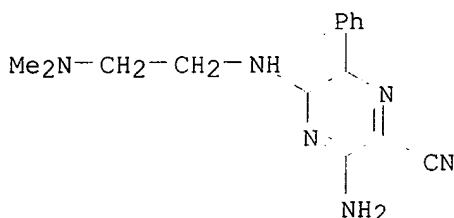


IT 313340-34-0P 313340-36-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of nitrogen-contg. heterocyclic derivs. as remedies for complications of diabetes)

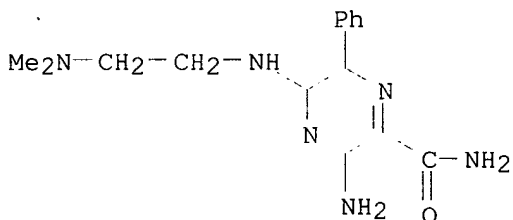
RN 313340-34-0 CAPLUS

CN Pyrazinecarbonitrile, 3-amino-5-[[2-(dimethylamino)ethyl]amino]-6-phenyl-  
 (9CI) (CA INDEX NAME)



RN 313340-36-2 CAPLUS

CN Pyrazinecarboxamide, 3-amino-5-[[2-(dimethylamino)ethyl]amino]-6-phenyl-  
 (9CI) (CA INDEX NAME)



REFERENCE COUNT:

17

REFERENCE(S):

- (1) Badiche Anilin- & Soda-Fabrik Aktiengesellschaft;  
US 3853895 A CAPLUS
  - (4) Badiche Anilin- & Soda-Fabrik Aktiengesellschaft;  
GB 1377505 A 1974 CAPLUS
  - (5) Badiche Anilin- & Soda-Fabrik Aktiengesellschaft;  
GB 1377505 A 1974 CAPLUS
  - (8) Beecham Corporation; EP 738144 A4 CAPLUS
  - (9) Beecham Corporation; EP 738144 A4 CAPLUS
- ALL CITATIONS AVAILABLE IN THE RE FORMAT

~~124~~ ANSWER 9 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 2000:666713 CAPLUS

DOCUMENT NUMBER: 133:252426

TITLE: Preparation of aromatic heterocyclic ureas as  
 antiinflammatory agents

Searched by Barb O'Bryen, STIC 308-4291

INVENTOR(S): Betageri, Rajashehar; Breitfelder, Steffen; Cirillo, Pier F.; Gilmore, Thomas A.; Hickey, Eugene R.; Kirrane, Thomas M.; Moriak, Monica H.; Moss, Neil; Patel, Usha R.; Proudfoot, John R.; Regan, John R.; Sharma, Rajiv; Sun, Sanxing; Swinamer, Alan D.; Takahashi, Hidenori

PATENT ASSIGNEE(S): Boehringer Ingelheim Pharmaceuticals, Inc., USA

SOURCE: PCT Int. Appl., 282 pp.  
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000055139	A2	20000921	WO 2000-US3865	20000216
WO 2000055139	A3	20010426		

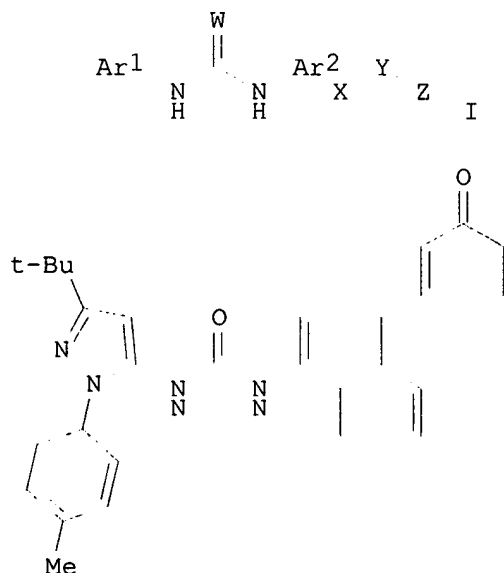
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RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

PRIORITY APPLN. INFO.: US 1999-124148 P 19990312  
US 1999-165867 P 19991116

OTHER SOURCE(S): MARPAT 133:252426

GI



II

AB The title compds. (I) [wherein Ar1 = (un)substituted pyrrole, pyrrolidine, pyrazole, imidazole, oxazole, thiazole, furan, or thiophene; Ar2 = (un)substituted Ph, (tetrahydro)naphthyl, (tetrahydro)quinoline, (tetrahydro)isoquinoline, benzimidazole, benzofuran, indanyl, indenyl, or indole; W = O or S; X = (un)substituted cycloalkyl, cycloalkenyl, Ph, furan, thiophene, pyrrole, imidazolyl, pyridine, pyrimidine,



IT 294849-42-6P 294851-20-0P

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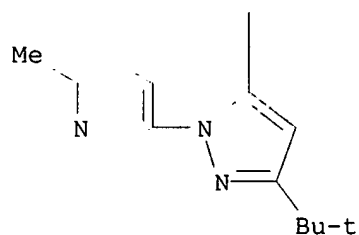
      separation; cond. (1987,
      (prepn. of arom. heterocyclic urea antiinflammatory agents by
      conversion of arylamines to isocyanates followed by addn. of
      heterocyclic amines)

```

CN Urea, N-[3-(1,1-dimethylethyl)-1-(6-methyl-3-pyridinyl)-1H-pyrazol-5-yl]-  
N'-[4-[5-[(tetrahydro-2H-thiopyran-4-yl)amino]pyrazinyl]-1-naphthalenyl]-  
(9CI) (CA INDEX NAME)

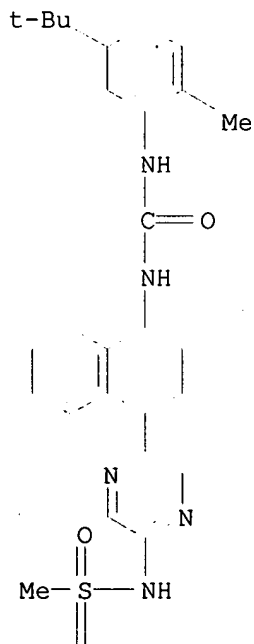
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PAGE 2-A



RN 294851-20-0 CAPLUS  
 CN Methanesulfonamide, N-[5-[4-[[[5-(1,1-dimethylethyl)-2-methylphenyl]amino]carbonyl]amino]-1-naphthalenyl]pyrazinyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



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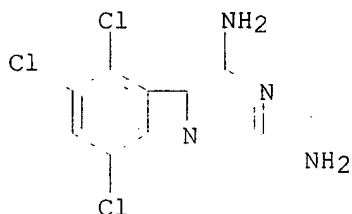
ANSWER 10 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 2000:456951 CAPLUS  
 DOCUMENT NUMBER: 133:79433  
 TITLE: Apparatus and process for preparing crystalline particles  
 INVENTOR(S): Lancaster, Robert William; Singh, Hardev; Theophilus, Andrew Lewis

Searched by Barb O'Bryen, STIC 308-4291

PATENT ASSIGNEE(S): Glaxo Group Limited, UK  
 SOURCE: PCT Int. Appl., 49 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000038811	A1	20000706	WO 1999-GB4368	19991222
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				

PRIORITY APPLN. INFO.: GB 1998-28721 A 19981224  
 AB A process for prepg. cryst. particles, esp. particles of a pharmaceutical or carrier substance suitable for inhalation therapy is described, in addn. to an app. for the prepn. of such particles. An example is give for distribution of particles of cryst. fluticasone propionate.  
 IT 212778-82-0  
 RL: PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)  
 (app. and process for prepg. cryst. particles)  
 RN 212778-82-0 CAPLUS  
 CN 2,6-Pyrazinediamine, 3-(2,3,5-trichlorophenyl)- (9CI) (CA INDEX NAME)

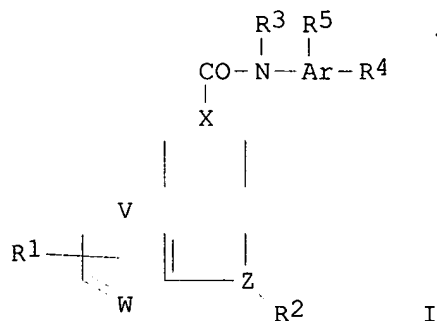


REFERENCE COUNT: 4  
 REFERENCE(S):  
 (1) Astra Ab; WO 9632095 A 1996 CAPLUS  
 (2) Clarke, W; WO 9833782 A 1998 CAPLUS  
 (3) Dso Pharmachim; DE 2504347 A 1976 CAPLUS  
 (4) Up John Co; WO 9003782 A 1990 CAPLUS

~~124~~ ANSWER 11 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 2000:335409 CAPLUS  
 DOCUMENT NUMBER: 132:334474  
 TITLE: Preparation of spiroindolines as Y5 receptor antagonists  
 INVENTOR(S): Gao, Ying-duo; Macneil, Douglas J.; Yang, Lihu; Morin, Nancy R.; Fukami, Takehiro; Kanatani, Akio; Fukuroda, Takahiro; Ishii, Yasuyuki; Morin, Masaki  
 PATENT ASSIGNEE(S): Merck & Co., Inc., USA; Banyu Pharmaceutical Co., Ltd.; et al.  
 SOURCE: PCT Int. Appl., 130 pp.  
 CODEN: PIXXD2

DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000027845	A1	20000518	WO 1999-US26447	19991108
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6191160	B1	20010220	US 1999-436120	19991108
PRIORITY APPLN. INFO.:		US 1998-107835 P 19981110		
OTHER SOURCE(S):		MARPAT 132:334474		
GI				



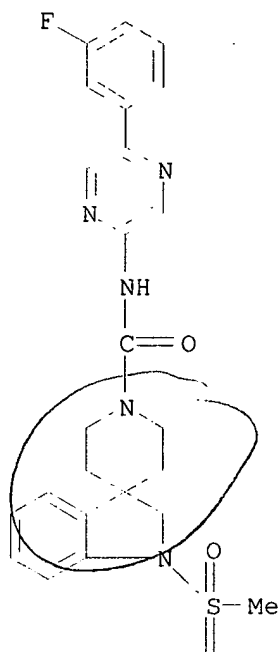
AB The title compds. I [V, W, X, Z = CH, N; R1 = H, alkyl, etc.; R2 = CHO, etc.; R3 = H, alkyl; Ar = aryl, heteroaryl; R4, R5 = H, nitro, etc.] are prepd. I are useful in the treatment of obesity and the complications assocd. therewith. 1-Methanesulfonyl-N-(5-phenyl-2-pyrazinyl)spiro[indoline-3,4'-piperidine]-1'-carboxamide at 3 mg/kg suppressed bovine pancreatic polypeptide-induced food intake in rats. Formulations are given.

IT 268536-92-1P 268536-93-2P 268536-94-3P  
 RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (prepn. of spiroindolines as Y5 receptor antagonists)

RN 268536-92-1 CAPLUS

CN Spiro[3H-indole-3,4'-piperidine]-1'-carboxamide, N-[5-(3-fluorophenyl)pyrazinyl]-1,2-dihydro-1-(methylsulfonyl)- (9CI) (CA INDEX NAME)

PAGE 1-A

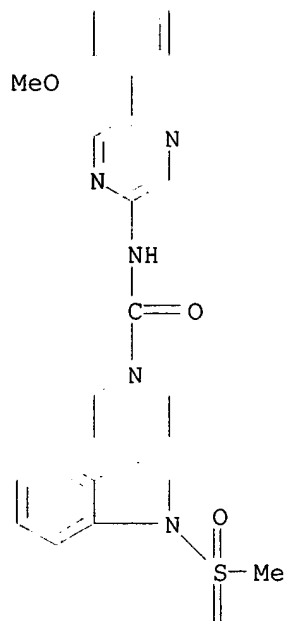


PAGE 2-A



RN 268536-93-2 CAPLUS  
CN Spiro[3H-indole-3,4'-piperidine]-1'-carboxamide, 1,2-dihydro-N-[5-(2-methoxyphenyl)pyrazinyl]-1-(methylsulfonyl)- (9CI) (CA INDEX NAME)

PAGE 1-A

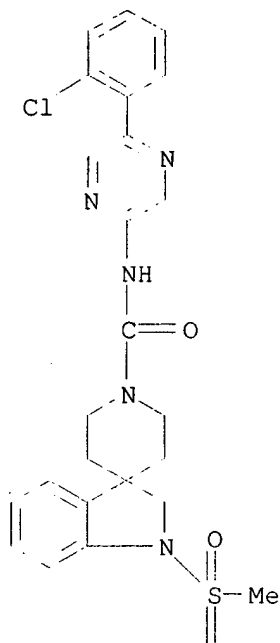


PAGE 2-A



RN 268536-94-3 CAPLUS  
CN Spiro[3H-indole-3,4'-piperidine]-1'-carboxamide, N-[5-(2-chlorophenyl)pyrazinyl]-1,2-dihydro-1-(methylsulfonyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



REFERENCE COUNT: 1  
 REFERENCE(S): (1) Bobowski; J Org Chem 1981, V46, P4927 CAPLUS  
 L24 ANSWER 12 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 2000:161266 CAPLUS  
 DOCUMENT NUMBER: 132:194395  
 TITLE: Preparation of pyrazines as anticonvulsants  
 INVENTOR(S): Cox, Brian; Healy, Mark Patrick; Wild, Deborah  
 PATENT ASSIGNEE(S): Glaxo Group Limited, UK  
 SOURCE: PCT Int. Appl., 40 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000012488	A1	20000309	WO 1999-EP6248	19990826
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				

RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK,  
 ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG,  
 CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

AU 9956249 A1 20000321 AU 1999-56249 19990826

BR 9913183 A 20010515 BR 1999-13183 19990826

EP 1107960 A1 20010620 EP 1999-942919 19990826

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
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PRIORITY APPLN. INFO.:

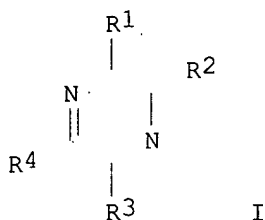
GB 1998-18881 A 19980828

WO 1999-EP6248 W 19990826

OTHER SOURCE(S):

MARPAT 132:194395

GI



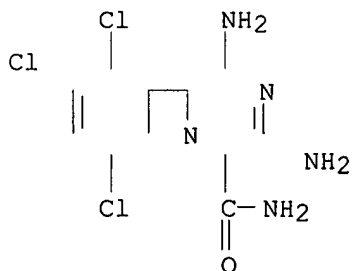
AB The title compds. [I; R1 = Ph substituted by one or more halogen atoms; R2 = NH2; R3 = NH2, H; R4 = CXNRaRb, CXNH(CH2)yNRaRb (wherein X = O, S; y = 0-2; Ra, Rb = H, alkyl; NRaRb = (un)substituted satd. 5-6 membered heterocycle contg. one or two N atoms)], useful in the treatment of CNS diseases such as epilepsy, were prepd. and formulated. E.g., a multi-step synthesis of pyrazine I [R1 = 2,3,5-Cl3C6H2; R2 = R3 = NH2; R4 = CONH2] was given. Compds. I showed ED50 of 1.4 mg/kg compared to 6.1 mg/kg for lamotrigine with a therapeutic index (ratio of the ataxia ED50 and MES ED50) of 21.6 compared to 3.3 for lamotrigine.

IT 259828-60-9P

RL: BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (prepn. of pyrazines as anticonvulsants)

RN 259828-60-9 CAPLUS

CN Pyrazinecarboxamide, 3,5-diamino-6-(2,3,5-trichlorophenyl)- (9CI) (CA INDEX NAME)



IT 259828-61-0P 259828-62-1P 259828-63-2P

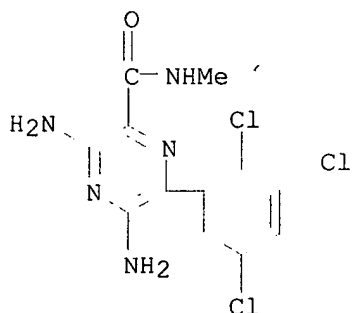
259828-65-4P 259828-67-6P

RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

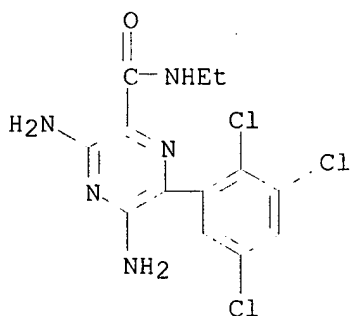


(prepn. of pyrazines as anticonvulsants)

RN 259828-61-0 CAPLUS

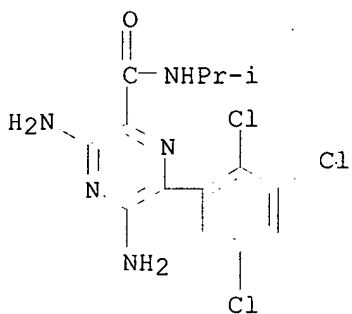
CN Pyrazinecarboxamide, 3,5-diamino-N-methyl-6-(2,3,5-trichlorophenyl)- (9CI)  
(CA INDEX NAME)

RN 259828-62-1 CAPLUS

CN Pyrazinecarboxamide, 3,5-diamino-N-ethyl-6-(2,3,5-trichlorophenyl)- (9CI)  
(CA INDEX NAME)

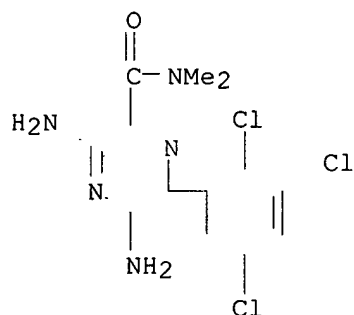
RN 259828-63-2 CAPLUS

CN Pyrazinecarboxamide, 3,5-diamino-N-(1-methylethyl)-6-(2,3,5-trichlorophenyl)- (9CI) (CA INDEX NAME)

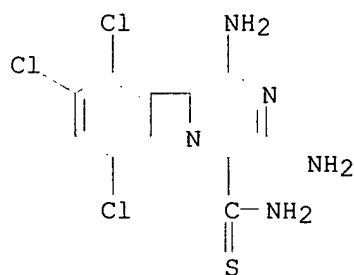


RN 259828-65-4 CAPLUS

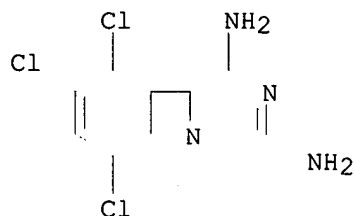
CN Pyrazinecarboxamide, 3,5-diamino-N,N-dimethyl-6-(2,3,5-trichlorophenyl)- (9CI) (CA INDEX NAME)



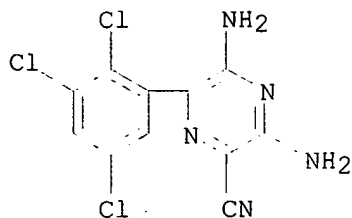
RN 259828-67-6 CAPLUS  
 CN Pyrazinecarbothioamide, 3,5-diamino-6-(2,3,5-trichlorophenyl)- (9CI) (CA INDEX NAME)



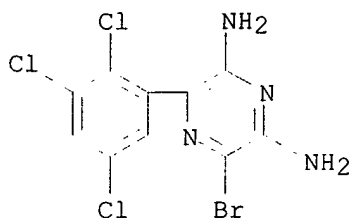
IT 212778-82-0P 212779-13-0P 212779-41-4P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of pyrazines as anticonvulsants)  
 RN 212778-82-0 CAPLUS  
 CN 2,6-Pyrazinediamine, 3-(2,3,5-trichlorophenyl)- (9CI) (CA INDEX NAME)



RN 212779-13-0 CAPLUS  
 CN Pyrazinecarbonitrile, 3,5-diamino-6-(2,3,5-trichlorophenyl)- (9CI) (CA INDEX NAME)

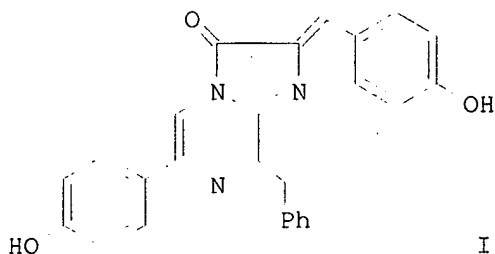


RN 212779-41-4 CAPLUS  
 CN 2,6-Pyrazinediamine, 3-bromo-5-(2,3,5-trichlorophenyl)- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 1  
 REFERENCE(S): (1) Cragoe, E; US 3575975 A 1971 CAPLUS

L24 ANSWER 13 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 2000:303570 CAPLUS  
 DOCUMENT NUMBER: 133:58657  
 TITLE: Synthesis of <sup>13</sup>C-Dehydrocoelenterazine and NMR studies on the bioluminescence of a Symplectoteuthis model  
 AUTHOR(S): Kuse, Masaki; Isobe, Minoru  
 CORPORATE SOURCE: Laboratory of Organic Chemistry, School of Bioagricultural Sciences, Nagoya University, Nagoya, 464-8601, Japan  
 SOURCE: Tetrahedron (2000), 56(17), 2629-2639  
 CODEN: TETRAB; ISSN: 0040-4020  
 PUBLISHER: Elsevier Science Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI



AB The bioluminescence of luminous squid (*Symplectoteuthis oualaniensis*) is presumed to be initiated by the addn. of the sulfhydryl residue of a photoprotein to dehydrocoelenterazine (I). To clarify this step, a novel

synthetic route was established to label I with  $^{13}\text{C}$ . Dithiothreitol (II) and glutathione (III) were used as photoprotein models. The addn. of II and III to  $^{13}\text{C}$ -labeled I gave luminous chromophores. Its structures were confirmed by NMR and MS spectrometry. The II adduct emitted light under alk. condition to produce an oxidized compd. Thus we succeeded in modeling the bioluminescence of a photoprotein with II.

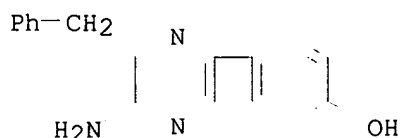
IT 37156-84-6, Coelenteramine

RL: RCT (Reactant)

(synthesis of  $^{13}\text{C}$ -Dehydrocoelenterazine and NMR studies on the bioluminescence of a Symplectoteuthis model)

RN 37156-84-6 CAPLUS

CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



IT 217481-40-8P 276879-78-8P

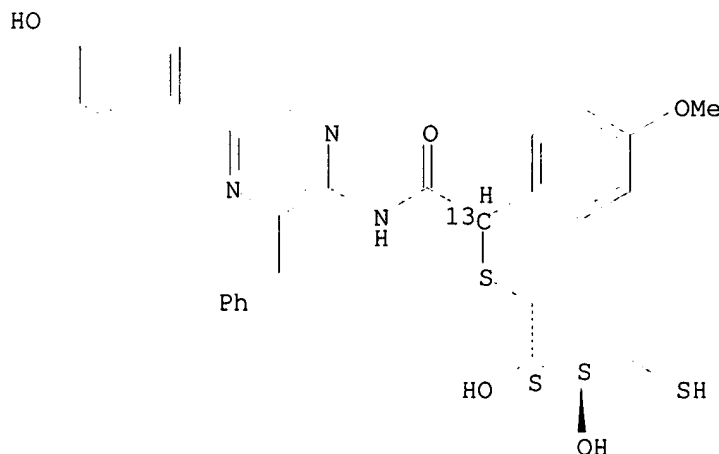
RL: SPN (Synthetic preparation); PREP (Preparation)

(synthesis of  $^{13}\text{C}$ -Dehydrocoelenterazine and NMR studies on the bioluminescence of a Symplectoteuthis model)

RN 217481-40-8 CAPLUS

CN Benzeneacetamide-.alpha.- $^{13}\text{C}$ , .alpha.-[[ (2R,3R)-2,3-dihydroxy-4-mercaptobutyl]thio]-N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]-4-methoxy-, rel- (9CI) (CA INDEX NAME)

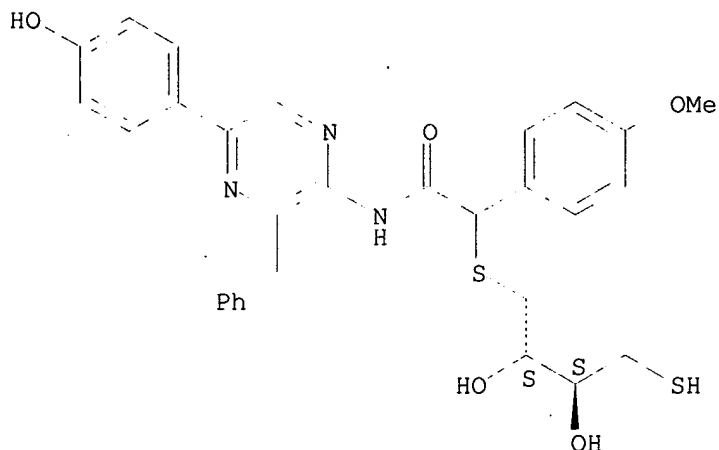
Relative stereochemistry.



RN 276879-78-8 CAPLUS

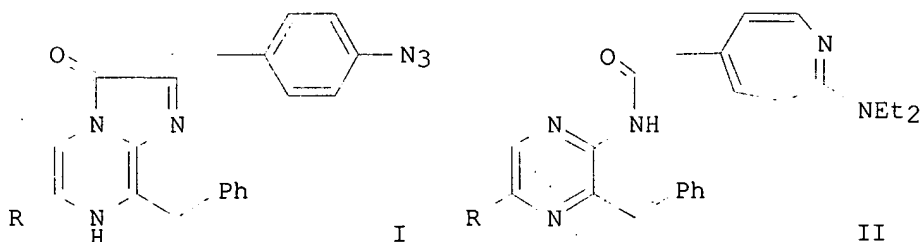
CN Benzeneacetamide, .alpha.-[[ (2R,3R)-2,3-dihydroxy-4-mercaptobutyl]thio]-N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]-4-methoxy-, rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



REFERENCE COUNT: 19  
 REFERENCE(S): (1) Gassman, P; Tetrahedron Lett 1978, P3773 CAPLUS  
 (2) Goto, T; Tetrahedron Lett 1974, P2321 CAPLUS  
 (3) Hirano, T; Tetrahedron 1997, V53, P12903 CAPLUS  
 (4) Iio, H; Tetrahedron 1979, V35, P941 CAPLUS  
 (5) Inoue, S; Chem Lett 1977, P259 CAPLUS  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 14 OF 145 CAPLUS COPYRIGHT 2001 ACS *interesting*  
 ACCESSION NUMBER: 2000:94056 CAPLUS  
 DOCUMENT NUMBER: 132:293593  
 TITLE: Synthesis, Chemi- and Bioluminescence Properties, and  
 Photolysis of a Coelenterazine Analogue Having a  
 Photoreactive Azido Group  
 AUTHOR(S): Zheng, Jing Ling; Chen, Feng Qi; Hirano, Takashi;  
 Ohmiya, Yoshihiro; Maki, Shojiro; Niwa, Haruki;  
 Ohashi, Mamoru  
 CORPORATE SOURCE: Dep. Appl. Phys. Chem., The University of  
 Electro-Communications, Chofu, Tokyo, 182-8585, Japan  
 SOURCE: Bull. Chem. Soc. Jpn. (2000), 73(2), 465-469  
 CODEN: BCSJA8; ISSN: 0009-2673  
 PUBLISHER: Chemical Society of Japan  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 132:293593  
 GI



AB A photoreactive analog of coelenterazine having an azido group (I) (R = 4-OH-C<sub>6</sub>H<sub>4</sub>) was synthesized. I showed similar chemi- and bioluminescence properties to those of the natural coelenterazine. Photolysis of I in the presence of diethylamine gave an aryl azepine (II) (R = 4-OH-C<sub>6</sub>H<sub>4</sub>) as the major product.

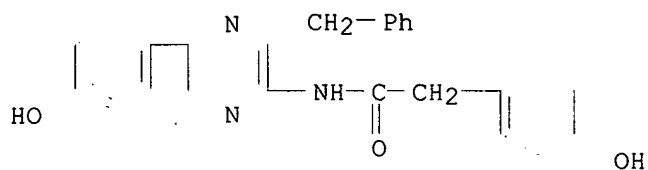
IT 50611-86-4

RL: PRP (Properties)

(synthesis, photochem. reaction and chemi- and bioluminescence properties of a coelenterazine analog having a azido group)

RN 50611-86-4 CAPLUS

CN Benzeneacetamide, 4-hydroxy-N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)

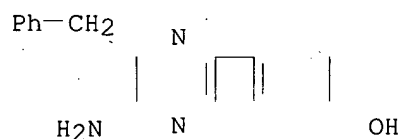


IT 37156-84-6P 264608-77-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(synthesis, photochem. reaction and chemi- and bioluminescence properties of a coelenterazine analog having a azido group)

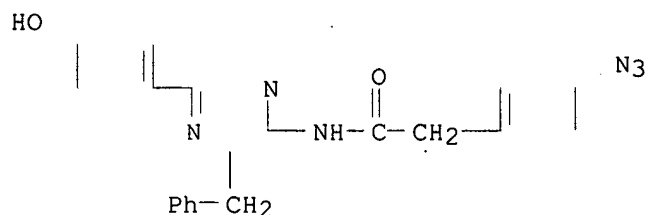
RN 37156-84-6 CAPLUS

CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



RN 264608-77-7 CAPLUS

CN Benzeneacetamide, 4-azido-N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)

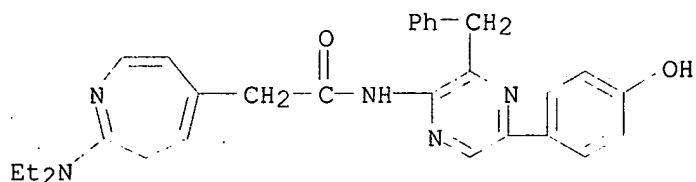


IT 264608-78-8P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(synthesis, photochem. reaction and chemi- and bioluminescence properties of a coelenterazine analog having a azido group)

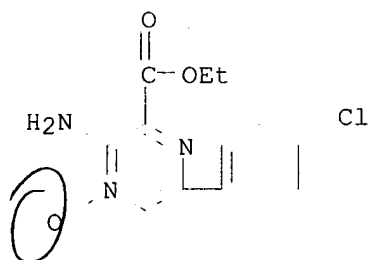
RN 264608-78-8 CAPLUS

CN 3H-Azepine-5-acetamide, 2-(diethylamino)-N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 34  
 REFERENCE(S): (5) Hirano, T; Tetrahedron Lett 1992, V33, P5771 CAPLUS  
 (6) Hori, K; Biochemistry 1975, V14, P2371 CAPLUS  
 (7) Inouye, S; J Biochem 1989, V105, P473 CAPLUS  
 (8) Inouye, S; Protein Expression Purif 1991, V2, P122 CAPLUS  
 (11) Knight, M; Nature 1991, V352, P524 CAPLUS  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

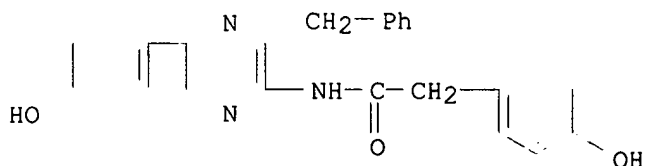
124 ANSWER 15 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 X  
 ACCESSION NUMBER: 2000:876627 CAPLUS  
 DOCUMENT NUMBER: 134:193276  
 TITLE: Direct introduction of indoles into 2-aminopyrazine 1-oxides  
 AUTHOR(S): Kovalev, Igor S.; Kozhevnikov, Dmitry N.; Rusinov, Vladimir L.; Chupakhin, Oleg N.; Raikov, Dmitry V.; Pustovarov, Vladimir A.; Shul'gin, Boris V.  
 CORPORATE SOURCE: Department of Organic Chemistry, Urals State Technical University, Yekaterinburg, 620002, Russia  
 SOURCE: Mendeleev Commun. (2000), (6), 229-230  
 CODEN: MENCEX; ISSN: 0959-9436  
 PUBLISHER: Russian Academy of Sciences  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB The synthesis of 6-indol-3-yl-2-pyrazinamines, analogs of the bioluminescent natural product Cypridina etioluciferamine, with enhanced photoluminescent properties, is reported.  
 IT 327035-56-3  
 RL: RCT (Reactant)  
 (prepn. of etioluciferamine analogs by direct introduction of indoles into aminopyrazine oxides)  
 RN 327035-56-3 CAPLUS  
 CN Pyrazinecarboxylic acid, 3-amino-6-(4-chlorophenyl)-, ethyl ester, 4-oxide (9CI) (CA INDEX NAME)



REFERENCE COUNT: 8  
 REFERENCE(S): (1) Chupakhin, O; Nucleophilic Aromatic Substitution of Hydrogen 1994, P367  
 (2) Hamana, M; Chem Pharm Bull 1967, V15, P363 CAPLUS  
 (3) Hamana, M; Chem Pharm Bull 1970, V18, P1742 CAPLUS

(4) Karpetsky, T; Tetrahedron 1973, V29, P3761 CAPLUS  
 (5) Rusinov, V; Russ J Org Chem 1998, V34, P400 CAPLUS  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 16 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 2000:207510 CAPLUS  
 DOCUMENT NUMBER: 133:17315  
 TITLE: Light-emitters involved in the luminescence of  
 coelenterazine  
 AUTHOR(S): Shimomura, Osamu; Teranishi, Katsunori  
 CORPORATE SOURCE: Marine Biological Laboratory, Woods Hole, MA, 02543,  
 USA  
 SOURCE: Luminescence (2000), 15(1), 51-58  
 CODEN: LUMIFC; ISSN: 1522-7235  
 PUBLISHER: John Wiley & Sons Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Coelenterazine emits light by chemi- and bioluminescence reactions,  
 decompg. into coelenteramide and CO<sub>2</sub>. To ascertain the light emitters  
 involved, the fluorescence of coelenteramide and five analogs were studies  
 in four kinds of solvent. The results showed that coelenteramides can  
 form five kinds of light emitters, ie unionized (.lambda.max 386-423 nm),  
 phenolate anion (.lambda.max 480-490 nm), phenolate anion temporarily  
 formed from the ion-pair state (.lambda.max 465-479 nm), amide anion  
 (.lambda.max 435-458 nm) and pyrazine-N(4) anion (.lambda.max 530-565 nm).  
 The chemiluminescence light emitter of coelenterazine in the presence of  
 alkali (.lambda.max 530-550 nm) was found to be the pyrazine-N(4) anion  
 and not the dianion (ie phenolate anion/amide anion), as previously  
 believed. In chemiluminescence, the normal light emitter is the amide  
 anion, and the pyrazine-N(4) anion emission may occur in the presence of  
 alkali, but light emission from any other emitters has not been obsd. In  
 the bioluminescence reaction, the normal light emitter is the amide anion,  
 but no other light emitter was obsd. except the unionized form found in  
 the Ca-triggered luminescence of semisynthetic aequorins prepd. with an  
 e-type coelenterazine instead of coelenterazine.  
 IT 50611-86-4P, Coelenteramide 50909-84-7P  
 50909-85-8P 157829-70-4P 272117-52-9P  
 272117-53-0P  
 RL: PEP (Physical, engineering or chemical process); RCT (Reactant); SPN  
 (Synthetic preparation); PREP (Preparation); PROC (Process)  
 (light-emitters involved in the chemi- and bioluminescence of  
 coelenterazine)  
 RN 50611-86-4 CAPLUS  
 CN Benzeneacetamide, 4-hydroxy-N-[5-(4-hydroxyphenyl)-3-  
 (phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



RN 50909-84-7 CAPLUS  
 CN Benzeneacetamide, N-[5-(4-methoxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI)  
 (CA INDEX NAME)

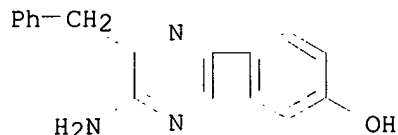


RL: RCT (Reactant)

(light-emitters involved in the chemi- and bioluminescence of  
coelenterazine)

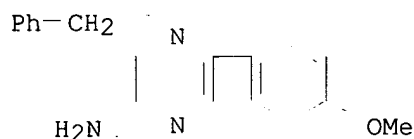
RN 37156-84-6 CAPLUS

CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



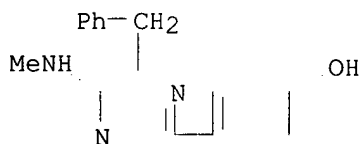
RN 40040-81-1 CAPLUS

CN Pyrazinamine, 5-(4-methoxyphenyl)-3-(phenylmethyl)- (9CI) (CA INDEX NAME)



RN 272117-54-1 CAPLUS

CN Phenol, 4-[5-(methyamino)-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



REFERENCE COUNT:

21

REFERENCE(S):

- (1) Campbell, A; Mar Biol 1990, V104, P219 CAPLUS
- (2) Hart, R; Biochemistry 1979, V18, P2204 CAPLUS
- (4) Hirano, T; Tetrahedron Lett 1998, V39, P5541 CAPLUS
- (5) Hori, K; Chem Commun 1973, P492 CAPLUS
- (6) Ireland, J; Adv Phys Org Chem 1976, V12, P131 CAPLUS

ALL CITATIONS AVAILABLE IN THE RE FORMAT

124 ANSWER 17 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1999:495258 CAPLUS

DOCUMENT NUMBER: 131:129907

TITLE: Preparation and formulation of tricyclic compounds as immunosuppressants and allergy inhibitors

INVENTOR(S): Tanimoto, Norihiko; Hasegawa, Yasushi; Haga, Nobuhiro

PATENT ASSIGNEE(S): Shionogi &amp; Co., Ltd., Japan

SOURCE: PCT Int. Appl., 298 pp.

CODEN: PIXXD2

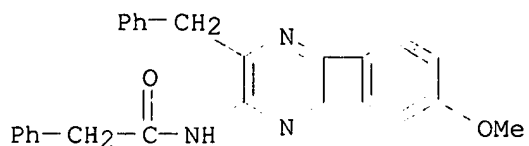
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

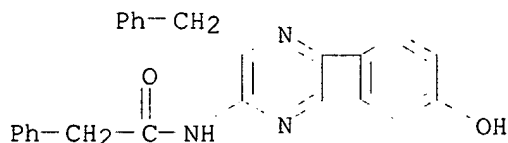
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

Searched by Barb O'Bryen, STIC 308-4291

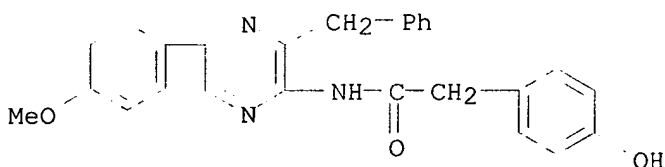


RN 50909-85-8 CAPLUS

CN Benzeneacetamide, N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI)  
(CA INDEX NAME)

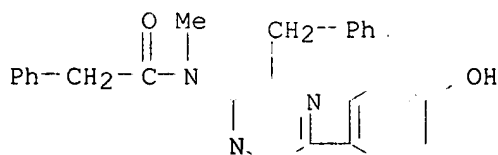
RN 157829-70-4 CAPLUS

CN Benzeneacetamide, 4-hydroxy-N-[5-(4-methoxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



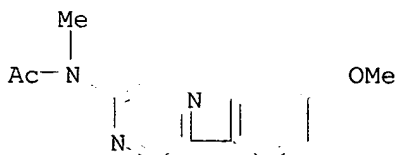
RN 272117-52-9 CAPLUS

CN Benzeneacetamide, N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]-N-methyl- (9CI) (CA INDEX NAME)

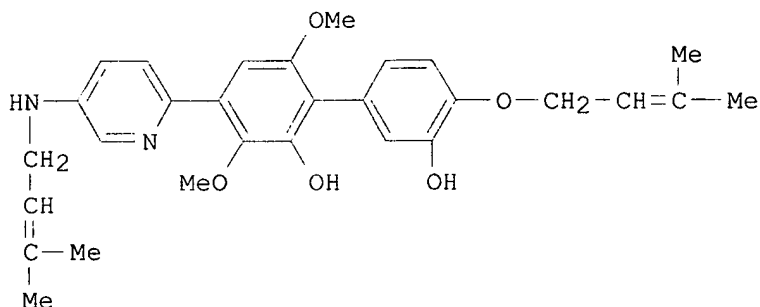
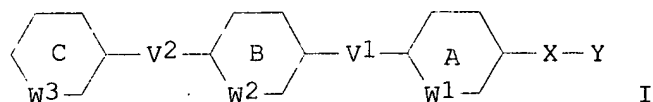


RN 272117-53-0 CAPLUS

CN Acetamide, N-[5-(4-methoxyphenyl)pyrazinyl]-N-methyl- (9CI) (CA INDEX NAME)

IT 37156-84-6, Coelenteramine 40040-81-1, Coelenteramine  
methyl ether 272117-54-1, N-Methylcoelenteramine

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9938829	A1	19990805	WO 1999-JP297	19990126
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9919837	A1	19990816	AU 1999-19837	19990126
EP 1052238	A1	20001115	EP 1999-900676	19990126
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
BR 9908539	A	20001205	BR 1999-8539	19990126
NO 2000003706	A	20000914	NO 2000-3706	20000719
PRIORITY APPLN. INFO.:			JP 1998-15554	A 19980128
			WO 1999-JP297	W 19990126
OTHER SOURCE(S):		MARPAT 131:129907		
GI				



AB The title compds. I [each of ring A, ring B and ring C is independently a substituted or unsubstituted arom. ring or a substituted or unsubstituted five or six-membered heterocycle which may be condensed with a benzene ring; when ring A, ring B and/or ring C is a substituted or unsubstituted five-membered heterocycle, W1, W2 and/or W3 represents a bond; X is O or NR1 (where R1 is hydrogen, a lower alkyl or the like); Y is hydrogen, a lower alkyl, a lower alkenyl or the like; one of V1 and V2 is a single bond and the other is a single bond, O, etc.] are prepd. The title compd. II in vitro showed IC50 of 400 ng/mL against the growth of mouse EL4 cells. The inhibiting activities of compds. of this invention against the prodn. of IgE were also demonstrated.

IT 234428-40-1P 234428-41-2P 234428-42-3P  
 234428-43-4P 234428-44-5P 234428-45-6P  
 234428-46-7P 234428-47-8P 234428-49-0P  
 234428-50-3P 234428-51-4P 234428-52-5P

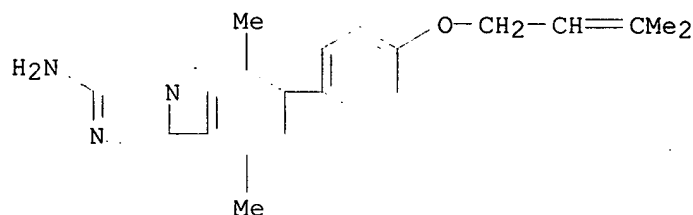
234428-53-6P 234429-20-0P 234429-21-1P

RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(prepn. of tricyclic compds. as immunosuppressants and allergy inhibitors)

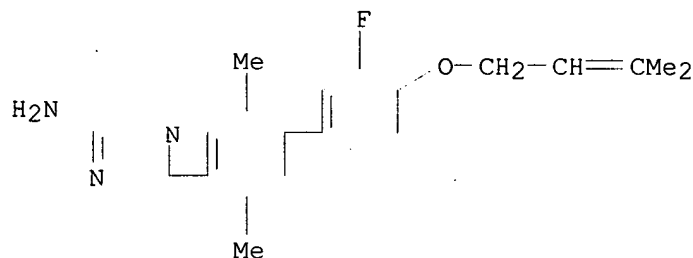
RN 234428-40-1 CAPLUS

CN Pyrazinamine, 5-[2,5-dimethyl-4'-[(3-methyl-2-butenyl)oxy][1,1'-biphenyl]-4-yl]- (9CI) (CA INDEX NAME)



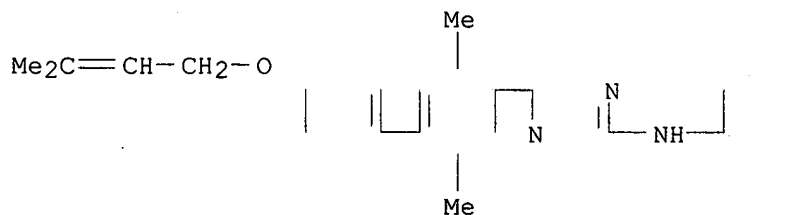
RN 234428-41-2 CAPLUS

CN Pyrazinamine, 5-[3'-fluoro-2,5-dimethyl-4'-[(3-methyl-2-butenyl)oxy][1,1'-biphenyl]-4-yl]- (9CI) (CA INDEX NAME)



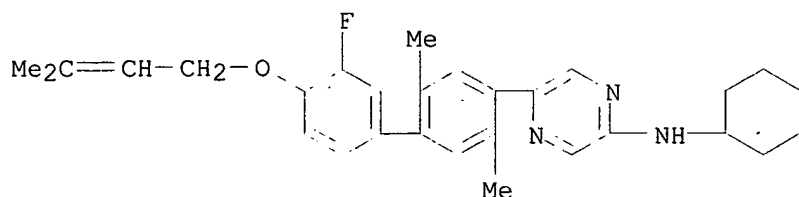
RN 234428-42-3 CAPLUS

CN Pyrazinamine, N-cyclohexyl-5-[2,5-dimethyl-4'-[(3-methyl-2-butenyl)oxy][1,1'-biphenyl]-4-yl]- (9CI) (CA INDEX NAME)



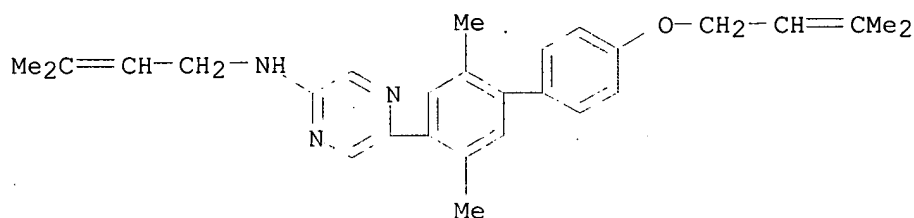
RN 234428-43-4 CAPLUS

CN Pyrazinamine, N-cyclohexyl-5-[3'-fluoro-2,5-dimethyl-4'-[(3-methyl-2-butenyl)oxy][1,1'-biphenyl]-4-yl]- (9CI) (CA INDEX NAME)



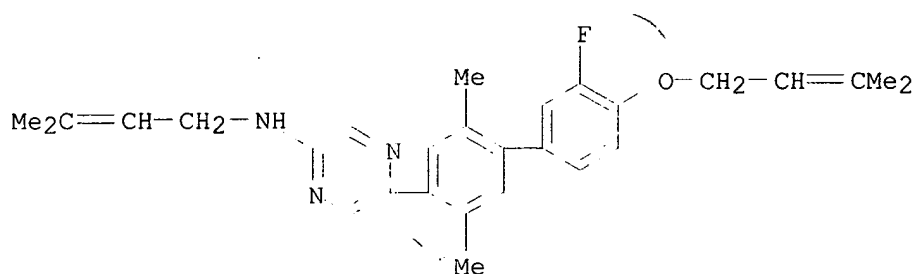
RN 234428-44-5 CAPLUS

CN Pyrazinamine, 5-[2,5-dimethyl-4'-[(3-methyl-2-butenyl)oxy][1,1'-biphenyl]-4-yl]-N-(3-methyl-2-butenyl)- (9CI) (CA INDEX NAME)



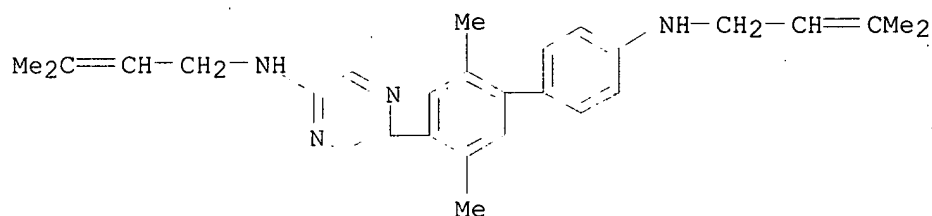
RN 234428-45-6 CAPLUS

CN Pyrazinamine, 5-[3'-fluoro-2,5-dimethyl-4'-[(3-methyl-2-butenyl)oxy][1,1'-biphenyl]-4-yl]-N-(3-methyl-2-butenyl)- (9CI) (CA INDEX NAME)



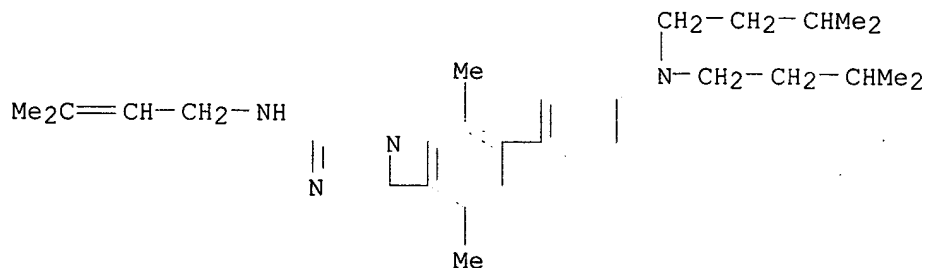
RN 234428-46-7 CAPLUS

CN Pyrazinamine, 5-[2,5-dimethyl-4'-[(3-methyl-2-butenyl)amino][1,1'-biphenyl]-4-yl]-N-(3-methyl-2-butenyl)- (9CI) (CA INDEX NAME)

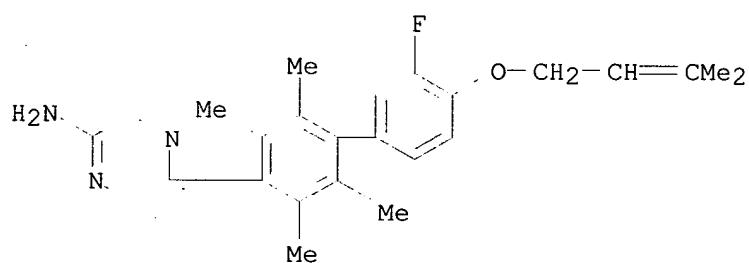


RN 234428-47-8 CAPLUS

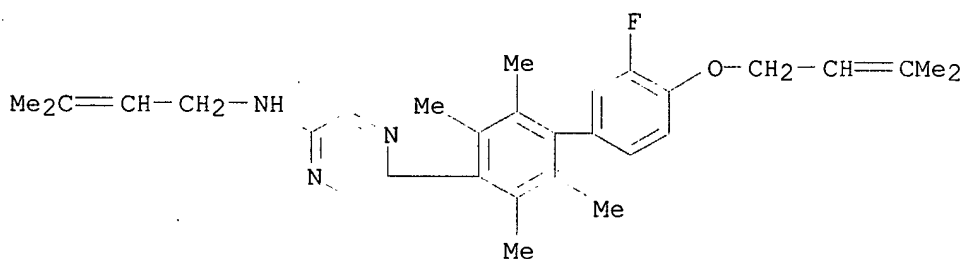
CN Pyrazinamine, 5-[4'-[bis(3-methylbutyl)amino]-2,5-dimethyl[1,1'-biphenyl]-4-yl]-N-(3-methyl-2-butenyl)- (9CI) (CA INDEX NAME)



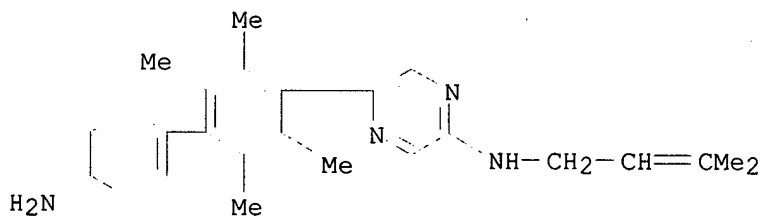
RN 234428-49-0 CAPLUS  
 CN Pyrazinamine, 5-[3'-fluoro-2,3,5,6-tetramethyl-4'-[(3-methyl-2-butenyl)oxy][1,1'-biphenyl]-4-yl]- (9CI) (CA INDEX NAME)



RN 234428-50-3 CAPLUS  
 CN Pyrazinamine, 5-[3'-fluoro-2,3,5,6-tetramethyl-4'-[(3-methyl-2-butenyl)oxy][1,1'-biphenyl]-4-yl]-N-(3-methyl-2-butenyl)- (9CI) (CA INDEX NAME)

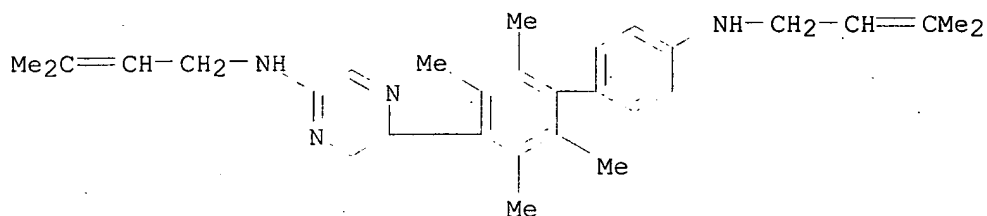


RN 234428-51-4 CAPLUS  
 CN Pyrazinamine, 5-(4'-amino-2,3,5,6-tetramethyl[1,1'-biphenyl]-4-yl)-N-(3-methyl-2-butenyl)- (9CI) (CA INDEX NAME)



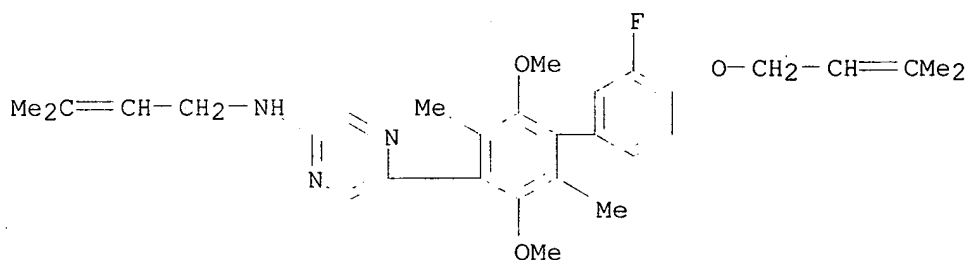
RN 234428-52-5 CAPLUS

CN Pyrazinamine, N-(3-methyl-2-butenyl)-5-[2,3,5,6-tetramethyl-4'-[(3-methyl-2-butenyl)amino][1,1'-biphenyl]-4-yl]- (9CI) (CA INDEX NAME)



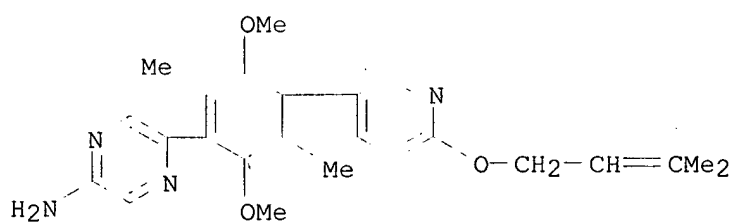
RN 234428-53-6 CAPLUS

CN Pyrazinamine, 5-[3'-fluoro-2,5-dimethoxy-3,6-dimethyl-4'-[(3-methyl-2-butenyl)oxy][1,1'-biphenyl]-4-yl]-N-(3-methyl-2-butenyl)- (9CI) (CA INDEX NAME)



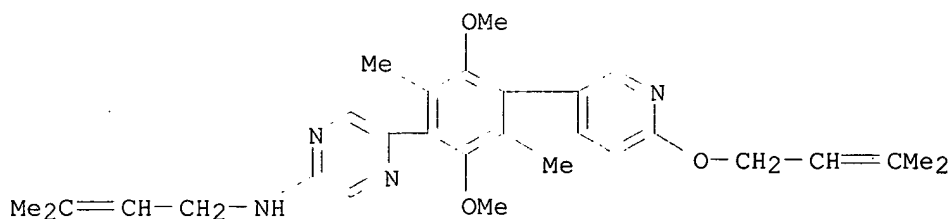
RN 234429-20-0 CAPLUS

CN Pyrazinamine, 5-[2,5-dimethoxy-3,6-dimethyl-4-[6-[(3-methyl-2-butenyl)oxy]-3-pyridinyl]phenyl]- (9CI) (CA INDEX NAME)



RN 234429-21-1 CAPLUS

CN Pyrazinamine, 5-[2,5-dimethoxy-3,6-dimethyl-4-[6-[(3-methyl-2-butenyl)oxy]-3-pyridinyl]phenyl]-N-(3-methyl-2-butenyl)- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 41  
 REFERENCE(S): (1) American Home Products Corp; EP 310370 A1 CAPLUS  
 (2) American Home Products Corp; US 4826990 A CAPLUS  
 (3) American Home Products Corp; US 4895953 A CAPLUS  
 (4) American Home Products Corp; JP 01143856 A 1989  
 CAPLUS  
 (5) Assyaaiosifovna, P; EP 310676 A1 CAPLUS  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 18 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1999:530311 CAPLUS

DOCUMENT NUMBER: 131:181663

TITLE: Crystallization of Coleoptera luciferase and elucidation of its three-dimensional structure

INVENTOR(S): Hirokawa, Kozo; Kajiyama, Naoki

PATENT ASSIGNEE(S): Kikkoman Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

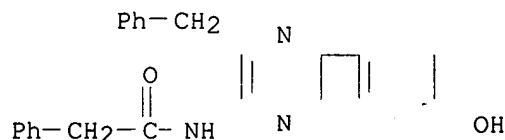
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 11225753	A2	19990824	JP 1998-54210	19980220
AB	Described is a luciferase of Coleoptera origin that has been crystd. in the form of a complex with its substrate and used for the elucidation of its three-dimension structure to the level of the side chains with X-ray crystallog. Crystn. of thermostable luciferase T-M-2 of Luciola cruciata by using substrate ATP (and substrate luciferin) and pptg. agent polyethylene glycol, followed by the vapor diffusion method, was shown. The crystal is characterized as having space groups of P212121; lattice const. a= 100.8 .ANG., b= 109.5 .ANG., c= 53.6 .ANG.; and .alpha.=.beta.=.gamma.=90.degree..				
IT	50909-85-8, Oxyluciferin				
	RL: NUU (Nonbiological use, unclassified); USES (Uses) (substrate; crystn. of Coleoptera luciferase and elucidation of three-dimensional structure)				
RN	50909-85-8 CAPLUS				
CN	Benzeneacetamide, N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)				



L24 ANSWER 19 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 2000:87183 CAPLUS

DOCUMENT NUMBER: 133:70902

TITLE: Aminopyrazine analogues as chemiluminescence derivatization reagents for pyruvic acid

AUTHOR(S): Sakata, Miyuki; Sakata, Noriaki; Ohba, Yoshihito; Zaitzu, Kiyoshi

CORPORATE SOURCE: Graduate School of Pharmaceutical Sciences, Kyushu University, Fukuoka, 812-8582, Japan



SOURCE: Luminescence (1999), 14(6), 365-367  
CODEN: LUMIFC; ISSN: 1522-7235  
PUBLISHER: John Wiley & Sons Ltd.  
DOCUMENT TYPE: Journal  
LANGUAGE: English

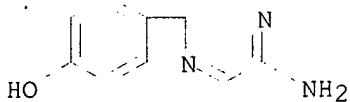
AB Aminopyrazine analogs were studied as sensitive and selective chemiluminescence derivatization reagents for pyruvic acid. These analogs reacted with pyruvic acid under acidic conditions at 100 .degree.C to produce Cypridina luciferin derivs., which exhibit chemiluminescence by reaction with hydrogen peroxide in the presence of potassium t-butoxide in DMF. Of the four aminopyrazine analogs (2-amino-5-phenylpyrazine, 2-amino-5-(4-hydroxyphenyl)pyrazine, 2-amino-5-(3,4,5-trimethoxyphenyl)pyrazine, and 2-aminoquinoxaline), in the present test 2-amino-5-(3,4,5-trimethoxyphenyl) pyrazine was the most sensitive for pyruvic acid, and the chemiluminescence intensity was about four times higher than that obtained with aminopyrazine.

IT 204770-67-2P 278777-51-8P

RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
(aminopyrazine analogs as chemiluminescence derivatization reagents for pyruvic acid)

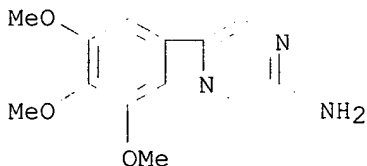
RN 204770-67-2 CAPLUS

CN Phenol, 4-(5-aminopyrazinyl)- (9CI) (CA INDEX NAME)



RN 278777-51-8 CAPLUS

CN Pyrazinamine, 5-(3,4,5-trimethoxyphenyl)- (9CI) (CA INDEX NAME)



REFERENCE COUNT:

15

REFERENCE(S):

- (1) Hara, S; Anal Chim Acta 1985, V172, P167 CAPLUS
  - (2) Hayashi, T; Anal Biochem 1982, V122, P173 CAPLUS
  - (3) Hayashi, T; J Chromatogr 1983, V273, P245 CAPLUS
  - (4) Hemming, B; Anal Biochem 1979, V92, P31 CAPLUS
  - (5) Ishida, J; Anal Chim Acta 1990, V231, P1 CAPLUS
- ALL CITATIONS AVAILABLE IN THE RE FORMAT

124 ANSWER 20 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 2000:87172 CAPLUS

DOCUMENT NUMBER: 132:279412

TITLE: Investigation of cyclomaltooligosaccharide-bound  
6-(4-methoxyphenyl)imidazo[1,2-a]pyrazin-3(7 H)-one  
for enhanced chemiluminescence

AUTHOR(S): Teranishi, Katsunori; Tanabe, Saori; Hisamatsu,  
Makoto; Yamada, Tetsuya

CORPORATE SOURCE: Faculty of Bioresources, Mie University, Tsu,  
514-8507, Japan

SOURCE: Luminescence (1999), 14(6), 303-314  
CODEN: LUMIFC; ISSN: 1522-7235  
PUBLISHER: John Wiley & Sons Ltd.  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The chemiluminescence compd. 2-methyl-6-(4-methoxyphenyl)imidazo[1,2-a]pyrazin-3(7H)-one (MCLA) was attached to cyclomaltooligosaccharides (cyclodextrins) through a single spacer by the formation of an amide bond. The properties of oxygen-induced chemiluminescence of the synthesized cyclodextrin-bound MCLA were investigated in an aq. phosphate buffer, pH 8.0. The light-emitting efficiency was remarkably dependent on the kind of bound cyclodextrin, spacer length between the MCLA and cyclodextrin, and the binding site in cyclodextrin. The light-emitting efficiencies of cyclomaltooctaose (.gamma.-cyclodextrin)-bound compds. were higher than those of cyclomaltohexaose- or cyclomaltoheptaose-bound compds. Esp., compds. in which MCLA attached to the secondary side of .gamma.-cyclodextrin through a short chain showed an up to 44-fold enhancement over that of a non-cyclodextrin compd. In the current case, the efficiency of single excited-state formation was 23 times greater than that of the non-cyclodextrin compd. and significantly responsible for greater light-emitting efficiency. The chemiluminescence spectra indicated the wide entrance of the secondary side of .gamma.-cyclodextrin, and the short spacer allowed suitable intramol. affinity between the singlet excited-state chromophore moiety and the cyclodextrin.

IT 263905-25-5P 263905-26-6P 263905-27-7P

263905-28-8P 263905-29-9P 263905-30-2P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(investigation of cyclomaltooligosaccharide-bound 6-(methoxyphenyl)imidazo[1,2-a]pyrazinone for enhanced chemiluminescence)

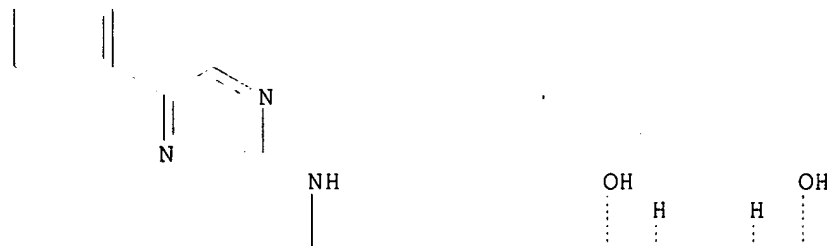
RN 263905-25-5 CAPLUS

CN .alpha.-Cyclodextrin, 3A-deoxy-3A-[[4-[[5-(4-methoxyphenyl)pyrazinyl]amino]-1,4-dioxobutyl]amino]-, (2AS,3AS)- (9CI) (CA INDEX NAME)

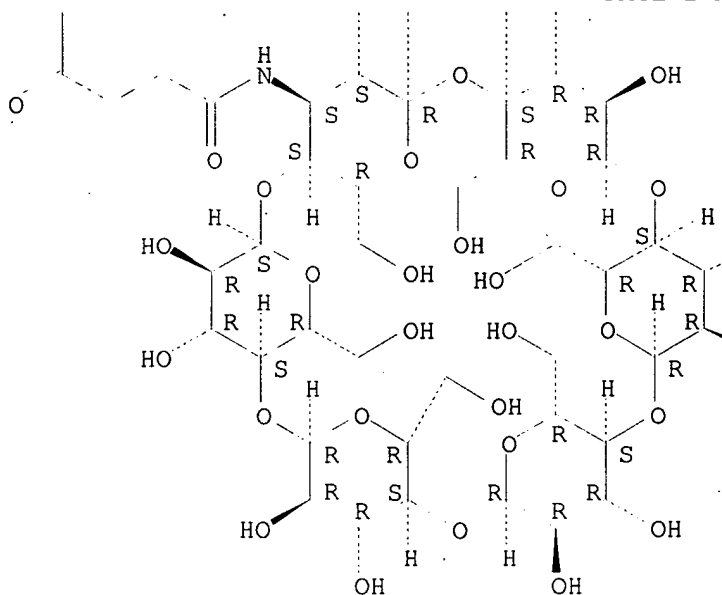
Absolute stereochemistry.

PAGE 1-A

MeO



PAGE 2-A



PAGE 2-B

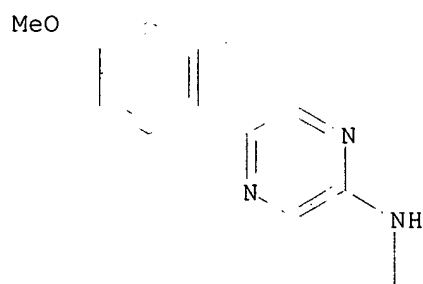
OH

OH

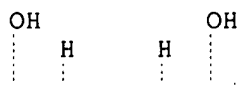
RN 263905-26-6 CAPLUS  
 CN .beta.-Cyclodextrin, 3A-deoxy-3A-[[4-[[5-(4-methoxyphenyl)pyrazinyl]amino]-  
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Absolute stereochemistry.

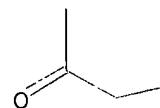
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PAGE 1-B



PAGE 2-A

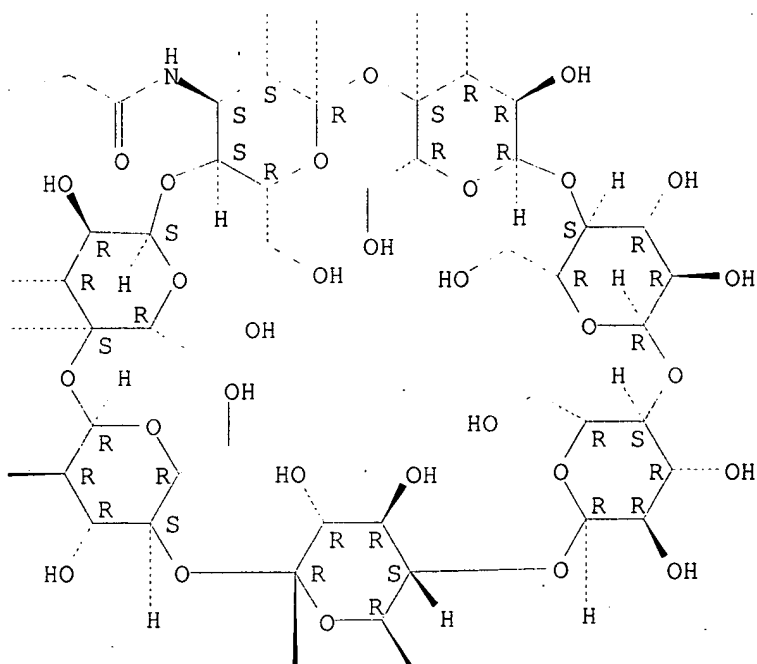


HO-----

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HO=

PAGE 2-B



PAGE 3-B

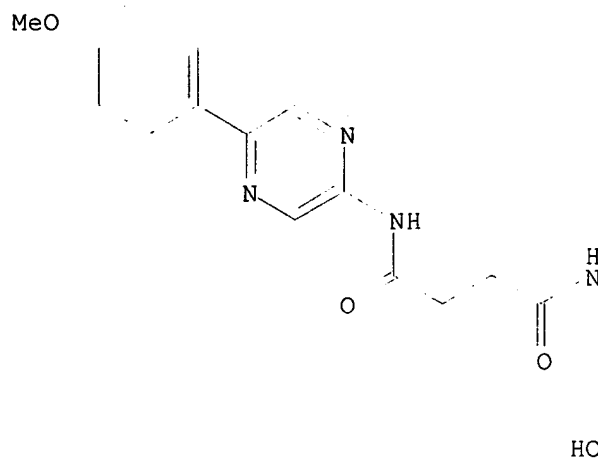


RN 263905-27-7 CAPLUS  
 CN .gamma.-Cyclodextrin, 3A-deoxy-3A-[[4-[[5-(4-methoxyphenyl)pyrazinyl]amino

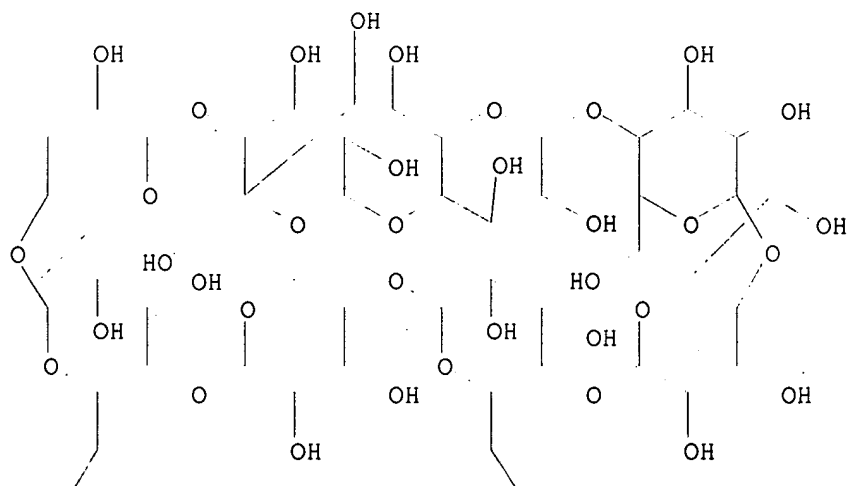
Searched by Barb O'Bryen, STIC ,308-4291

] -1,4-dioxobutyl]amino]-, (2AS,3AS)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



PAGE 2-B

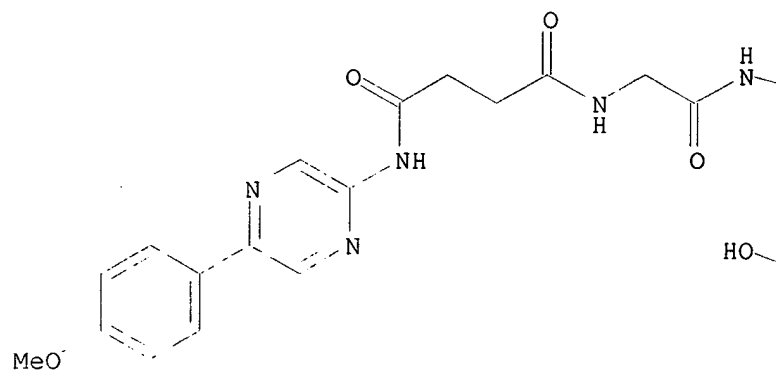
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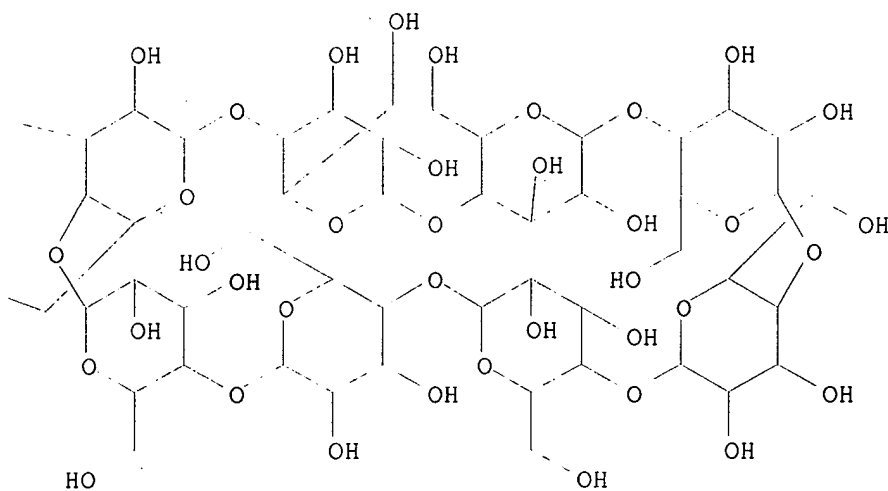
RN 263905-28-8 CAPLUS  
CN .gamma.-Cyclodextrin, 3A-deoxy-3A-[[[[4-[[5-(4-

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(2AS,3AS)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

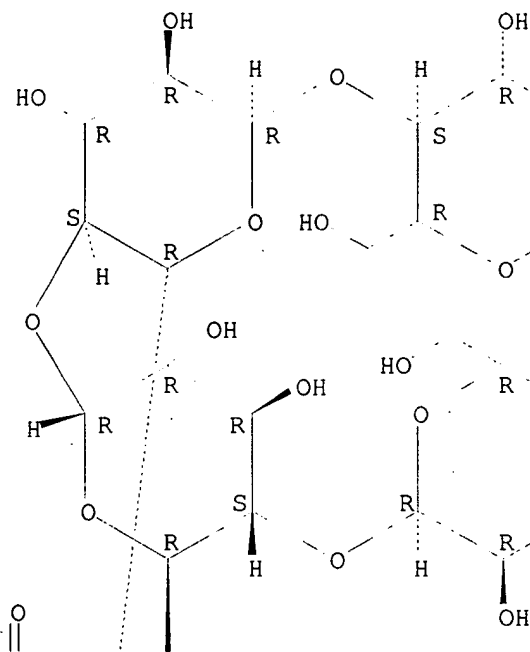


RN 263905-29-9 CAPLUS

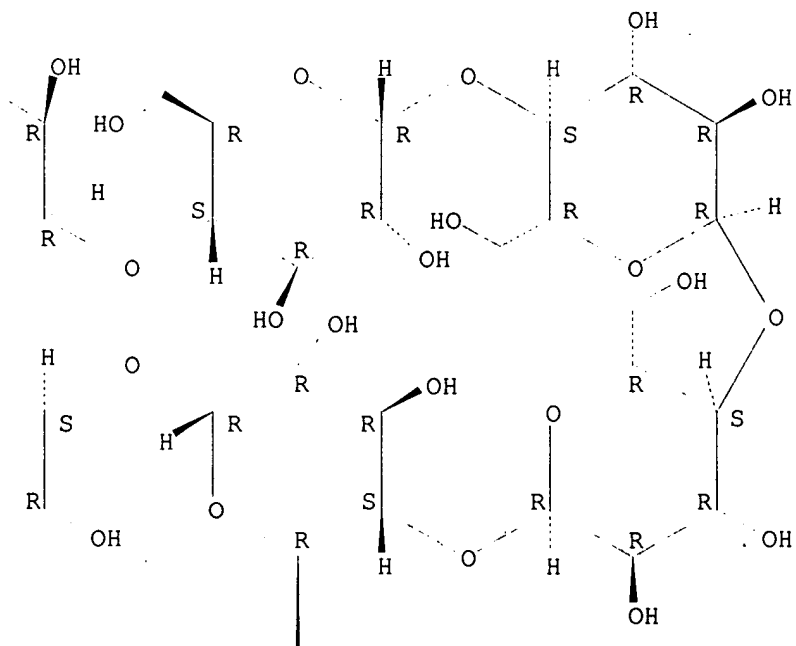
CN .gamma.-Cyclodextrin, 6A-deoxy-6A-[[4-[[5-(4-methoxyphenyl)pyrazinyl]amino]-1,4-dioxobutyl]amino]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-B



PAGE 1-C

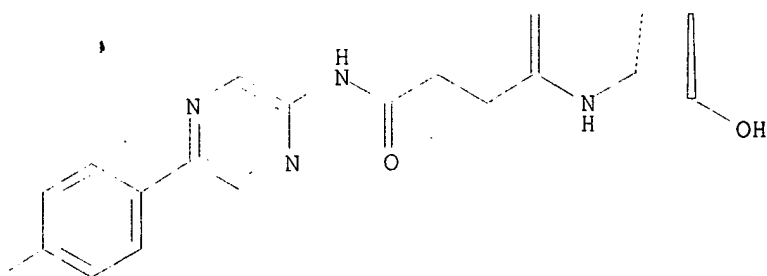




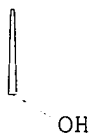
PAGE 2-A

MeO

PAGE 2-B



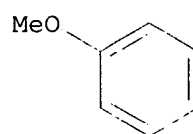
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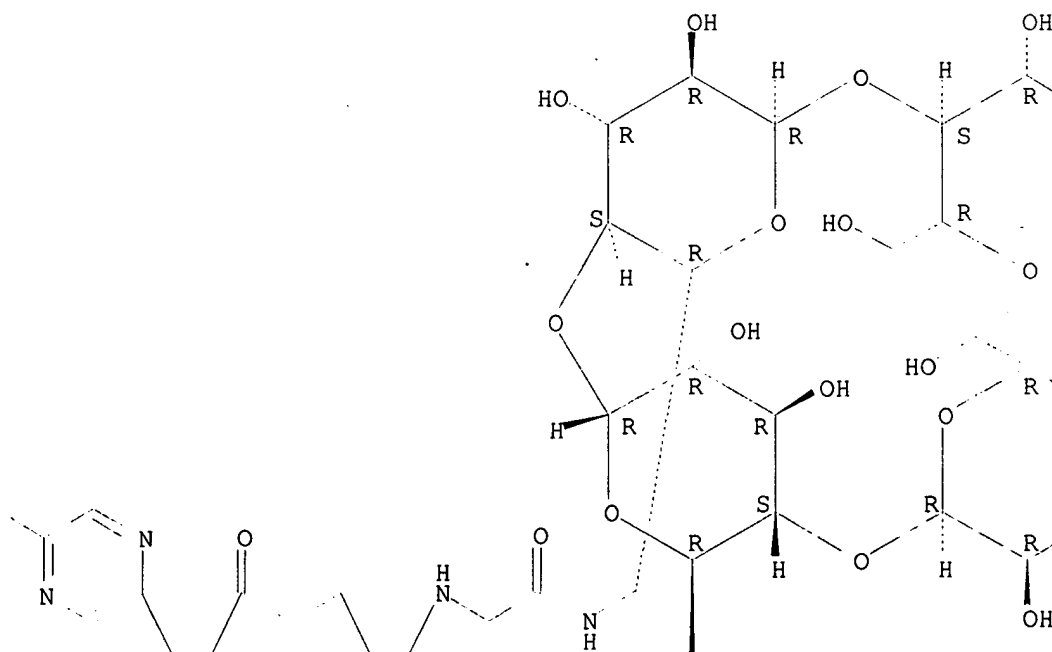
RN 263905-30-2 CAPLUS  
CN .gamma.-Cyclodextrin, 6A-deoxy-6A-[[[4-[[5-(4-methoxyphenyl)pyrazinyl]amino]-1,4-dioxobutyl]amino]acetyl]amino]- (9CI)  
(CA INDEX NAME)

Absolute stereochemistry.

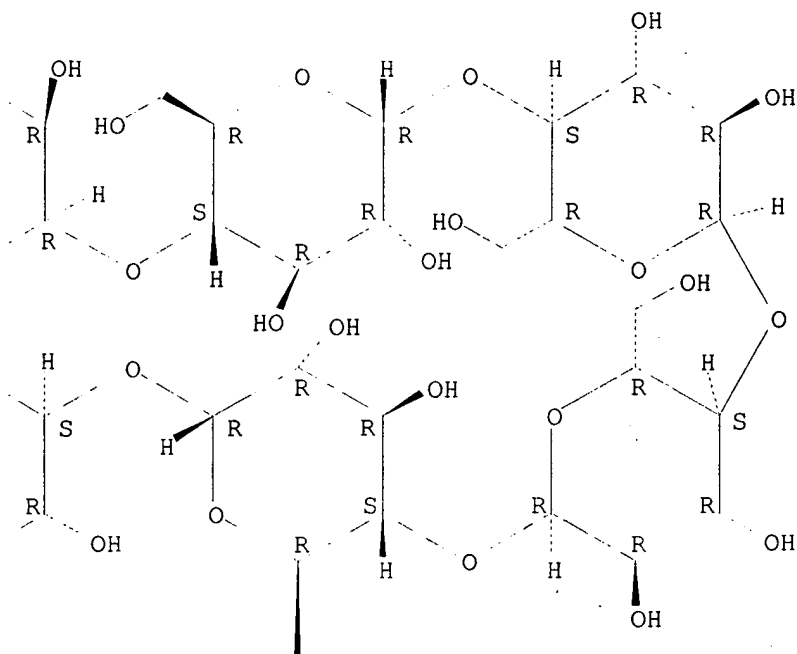
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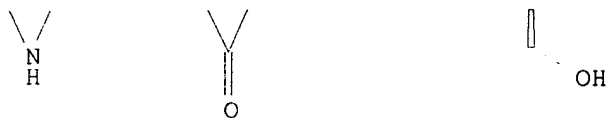
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PAGE 1-C



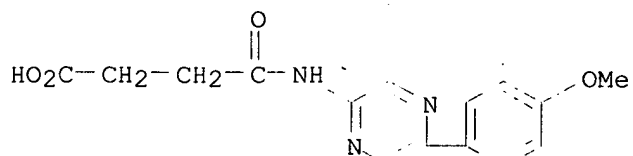
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PAGE 2-C



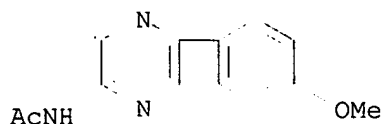
IT 212253-65-1  
 RL: RCT (Reactant)  
 (investigation of cyclomaltooligosaccharide-bound 6-(methoxyphenyl)imidazo[1,2-a]pyrazinone for enhanced chemiluminescence)  
 RN 212253-65-1 CAPLUS  
 CN Butanoic acid, 4-[[5-(4-methoxyphenyl)pyrazinyl]amino]-4-oxo- (9CI) (CA INDEX NAME)

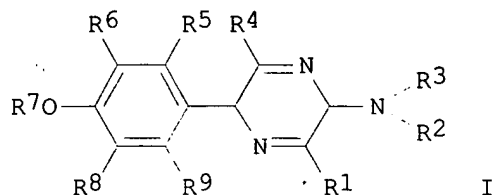


REFERENCE COUNT: 20  
 REFERENCE(S): (2) Goto, T; Bull Chem Soc Jpn 1980, V53, P833 CAPLUS  
 (3) Goto, T; Pure Appl Chem 1968, V17, P421 CAPLUS  
 (4) Grayeski, M; J Lumin 1985, V33, P115 CAPLUS  
 (5) Hamasaki, K; J Am Chem Soc 1993, V115, P5035 CAPLUS  
 (6) Howie, C; Proceedings of the 4th international, Bioluminescence Chemiluminescence Symposium 1987, P415 CAPLUS

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 21 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 2000:87171 CAPLUS  
 DOCUMENT NUMBER: 132:279042  
 TITLE: Chemiluminescence of 2-methyl-6-arylimidazo[1,2-a]pyrazin-3(7H)-one in protic solvents: electron-donating substituent effect on the formation of the neutral singlet excited-state molecule  
 AUTHOR(S): Teranishi, Katsunori; Hisamatsu, Makoto; Yamada, Tetsuya  
 CORPORATE SOURCE: Faculty of Bioresources, Mie University, Tsu, 514-8507, Japan  
 SOURCE: Luminescence (1999), 14(6), 297-302  
 CODEN: LUMIFC; ISSN: 1522-7235  
 PUBLISHER: John Wiley & Sons Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB 2-Methyl-6-arylimidazo[1,2-a]pyrazin-3(7H)-ones with a substituent such as Ph, 4-methoxyphenyl or 4-trifluoromethoxyphenyl at the 6-position of the imidazo[1,2-a]pyrazin-3(7H)-one ring system, produced chemiluminescence emission in mixts. of water and DMF and in several mixts. of MeOH and DMF under neutral conditions. Under these protic luminescence conditions, the resp. light emissions were generated from neutral singlet excited-state mols. The electron-donating effect of the 4-methoxy substituent on the Ph group increased the efficiency of the neutral singlet excited state formation, whereas non-substitution and a 4-trifluoromethoxy group having no electron donating ability decreased the efficiency. The compd. having the electron-donating methoxy group substituent showed two chemiluminescence emitters, which generated light at  $\lambda_{max}$  410-420 nm and 460 nm. It was detd. that the neutral mols. in the excited state generating light emission at the shorter wavelengths are neutral singlet excited-state mols. suitable for highly efficient singlet excited-state formation. A role of the electron-donating effect of the methoxy group is postulated to be generation of the special neutral singlet excited-state mols.  
 IT 144465-03-2  
 RL: PRP (Properties)  
 (electron-donating effect in chemiluminescence of 2-methyl-6-arylimidazo[1,2-a]pyrazin-3(7H)-one in protic solvents)  
 RN 144465-03-2 CAPLUS  
 CN Acetamide, N-[5-(4-methoxyphenyl)pyrazinyl]- (9CI) (CA INDEX NAME)





AB A pharmaceutical, cosmetic and/or food compn. comprises a pyrazine deriv. (I; R1 to R9 are H, radicals selected among the group consisting of alkyl, alkenyl, alkynyl aryl, arylalkyl, alkylaryl, heteroaryl, heteroalkyl, and hetero-(alkylaryl and arylalkyl), optionally substituted, or chains of formula (R5 x R6)<sub>n</sub>, in which n .gtoreq. 1, x represents one or several heteroatoms and R5 and R6 are radicals selected among the group consisting of alkyl, alkenyl, alkynyl, aryl, arylalkyl, alkylaryl, heteroaryl, heteroalkyl, and hetero-(alkylaryl and arylalkyl), optionally substituted). The invention also concerns the use of such a compn. for prepg. a medicine for preventing and/or treating pathologies related to the activity of oxygen promoters or for treating cancer tumors. The survival rate of cultured hepatocytes treated with 3x10<sup>-4</sup> M nitrofurantoin was 18%. Addn. of 5x10<sup>-5</sup> M coelenteramine to the medium increased the survival rate to 70%.

IT 37156-84-6, Coelenteramine

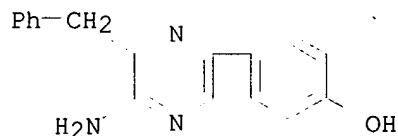
RL: BAC (Biological activity or effector, except adverse); THU

(Therapeutic use); BIOL (Biological study); USES (Uses)

(pharmaceutical, cosmetic and/or food compn. contg. pyrazine derivs. with antioxidant properties)

RN 37156-84-6 CAPLUS

CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



L24 ANSWER 23 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1998:608606 CAPLUS

DOCUMENT NUMBER: 129:230741

TITLE: Preparation of pyrazines as anticonvulsants

INVENTOR(S): Cox, Brian; Nobbs, Malcolm Stuart; Shah, Gita Punjabhai; Edney, Dean David; Loft, Michael Simon

PATENT ASSIGNEE(S): Glaxo Group Ltd., UK

SOURCE: PCT Int. Appl., 45 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

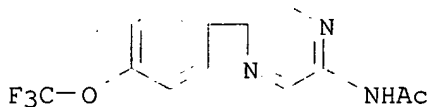
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IT 263768-33-8P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (electron-donating effect in chemiluminescence of 2-methyl-6-  
 arylimidazo[1,2-a]pyrazin-3(7H)-one in protic solvents)

RN 263768-33-8 CAPLUS

CN Acetamide, N-[5-[4-(trifluoromethoxy)phenyl]pyrazinyl]- (9CI) (CA INDEX  
 NAME)



REFERENCE COUNT:

33

REFERENCE(S):

- (1) Campbell, A; Mer Biol 1990, V104, P219 CAPLUS
  - (3) Goto, T; Pure Appl Chem 1968, V17, P421 CAPLUS
  - (4) Hirano, T; Tetrahedron Lett 1992, V33, P5771  
CAPLUS
  - (5) Hori, K; Biochemistry 1973, V12, P4463 CAPLUS
  - (6) Hori, K; J Chem Soc Chem Commun 1973, P492 CAPLUS
- ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 22 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1998:682124 CAPLUS

DOCUMENT NUMBER: 129:285984

TITLE: Pharmaceutical, cosmetic and/or food composition  
 containing pyrazine derivatives with antioxidant  
 properties

INVENTOR(S): Rees, Jean-Francois; Dubuisson, Marlene; Trouet, Andre

PATENT ASSIGNEE(S): Universite Catholique de Louvain, Belg.

SOURCE: PCT Int. Appl., 31 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9843641	A1	19981008	WO 1998-BE44	19980330
W: CA, JP, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
BE 1011077	A3	19990406	BE 1997-294	19970328
EP 975346	A1	20000202	EP 1998-913456	19980330
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				

PRIORITY APPLN. INFO.: BE 1997-294 19970328  
 WO 1998-BE44 19980330

OTHER SOURCE(S): MARPAT 129:285984  
 GI

KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX,  
 NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT,  
 UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI,  
 FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM,  
 GA, GN, ML, MR, NE, SN, TD, TG

AU 9868237 A1 19980918 AU 1998-68237 19980226

AU 732915 B2 20010503

EP 966448 A1 19991229 EP 1998-913592 19980226

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO

BR 9807814 A 20000222 BR 1998-7814 19980226

JP 2000511203 T2 20000829 JP 1998-537310 19980226

US 6255307 B1 20010703 US 1999-380062 19990825

NO 9904213 A 19991029 NO 1999-4213 19990831

PRIORITY APPLN. INFO.:

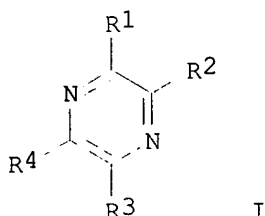
GB 1997-4275 A 19970301

GB 1997-8183 A 19970423

WO 1998-EP1077 W 19980226

OTHER SOURCE(S): MARPAT 129:230741

GI



*proviso directed to this application*

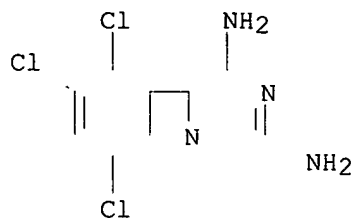
AB The title compds. [I; R1 (un)substituted by one or more halo atoms Ph, naphthyl; R2 = NH2, NHC(O)Ra; R3 = NRbRc, NHC(O)Ra, H; R4 = H, (un)substituted by one or more halo atoms Cl-4 alkyl, CN, etc.; Ra = Cl-4 alkyl, C3-7 cycloalkyl; Rb, Rc = H, Cl-4 alkyl; NRbRc = (un)substituted 6-membered nitrogen contg. heterocycle; with the proviso that R1 does not represent 4-ClC6H4 when R2 = NH2, and R3, R4 = H], useful in the treatment of epilepsy, bipolar disorder or manic depression, pain, functional bowel disorders, neurodegenerative diseases, neuroprotection, neurodegeneration, or prevention or reducing dependence on, or preventing or reducing tolerance or reverse tolerance to, a dependence-inducing agent, were prepd. and formulated. Thus, treatment of 2-amino-6-chloro-3-(2,3,5-trichlorophenyl)pyrazine (prepn. described) with aq. ammonia in EtOH afforded 56% I [R1 = 2,3,5-Cl3C6H2; R2 = R3 = NH2; R4 = H]. Compds. I exhibited ED50's of 1-20 mg/kg when tested for antiepileptic activity.

IT 212778-82-0P 212778-83-1P 212779-15-2P

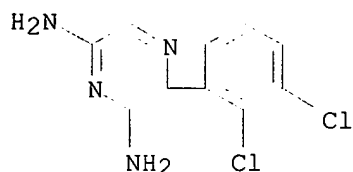
RL: BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (prepn. of pyrazines as anticonvulsants)

RN 212778-82-0 CAPLUS

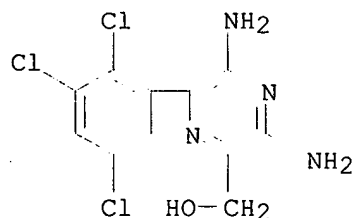
CN 2,6-Pyrazinediamine, 3-(2,3,5-trichlorophenyl)- (9CI) (CA INDEX NAME)



RN 212778-83-1 CAPLUS  
 CN 2,6-Pyrazinediamine, 3-(2,3-dichlorophenyl)- (9CI) (CA INDEX NAME)



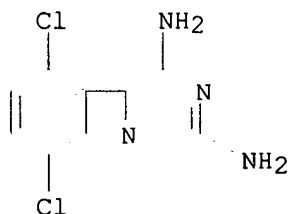
RN 212779-15-2 CAPLUS  
 CN Pyrazinemethanol, 3,5-diamino-6-(2,3,5-trichlorophenyl)- (9CI) (CA INDEX NAME)



IT 212778-84-2P 212778-94-4P 212778-96-6P  
 212779-00-5P 212779-01-6P 212779-03-8P  
 212779-05-0P 212779-07-2P 212779-09-4P  
 212779-13-0P 212779-17-4P

RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (prepn. of pyrazines as anticonvulsants)

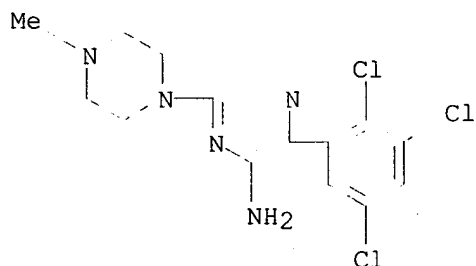
RN 212778-84-2 CAPLUS  
 CN 2,6-Pyrazinediamine, 3-(2,5-dichlorophenyl)- (9CI) (CA INDEX NAME)



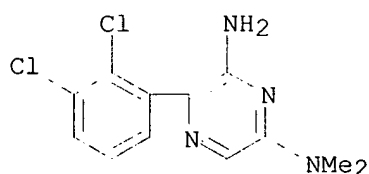
RN 212778-94-4 CAPLUS



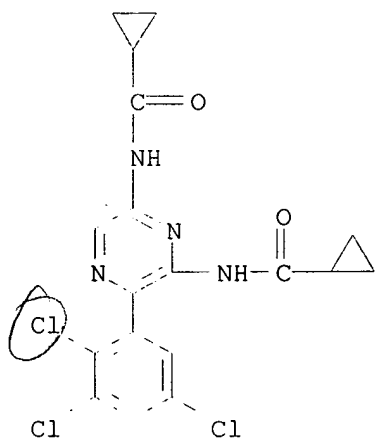
CN Pyrazinamine, 6-(4-methyl-1-piperazinyl)-3-(2,3,5-trichlorophenyl)- (9CI)  
(CA INDEX NAME)



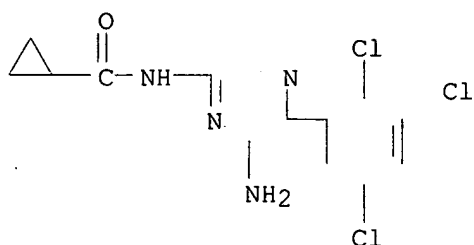
RN 212778-96-6 CAPLUS  
CN 2,6-Pyrazinediamine, 3-(2,3-dichlorophenyl)-N6,N6-dimethyl- (9CI) (CA INDEX NAME)



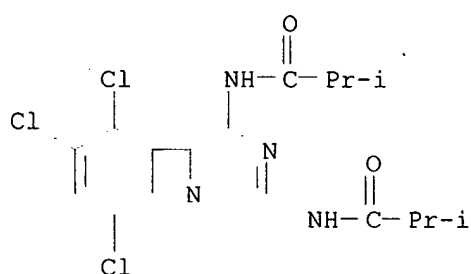
RN 212779-00-5 CAPLUS  
CN Cyclopropanecarboxamide, N,N'-[3-(2,3,5-trichlorophenyl)-2,6-pyrazinediyl]bis- (9CI) (CA INDEX NAME)



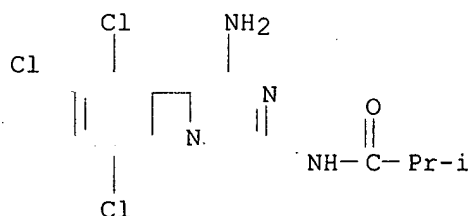
RN 212779-01-6 CAPLUS  
CN Cyclopropanecarboxamide, N-[6-amino-5-(2,3,5-trichlorophenyl)pyrazinyl]- (9CI) (CA INDEX NAME)



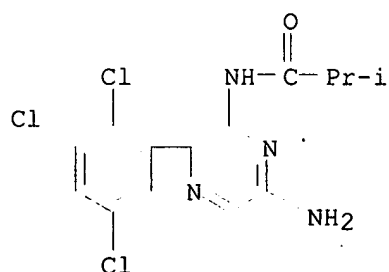
RN 212779-03-8 CAPLUS  
 CN Propanamide, N,N'-[3-(2,3,5-trichlorophenyl)-2,6-pyrazinediyl]bis[2-methyl-  
 (9CI) (CA INDEX NAME)



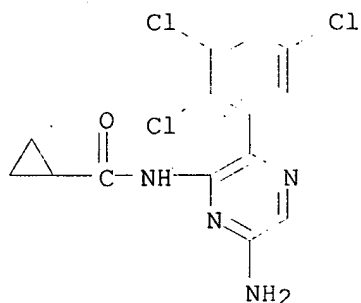
RN 212779-05-0 CAPLUS  
 CN Propanamide, N-[6-amino-5-(2,3,5-trichlorophenyl)pyrazinyl]-2-methyl-  
 (9CI) (CA INDEX NAME)



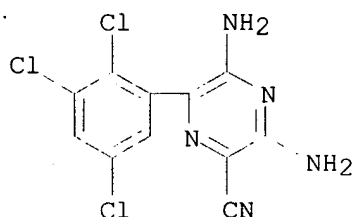
RN 212779-07-2 CAPLUS  
 CN Propanamide, N-[6-amino-3-(2,3,5-trichlorophenyl)pyrazinyl]-2-methyl-  
 (9CI) (CA INDEX NAME)



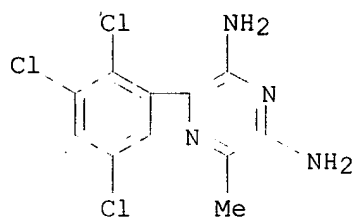
RN 212779-09-4 CAPLUS  
 CN Cyclopropanecarboxamide, N-[6-amino-3-(2,3,5-trichlorophenyl)pyrazinyl]-  
 (9CI) (CA INDEX NAME)



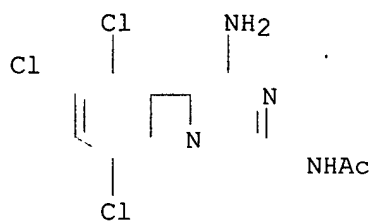
RN 212779-13-0 CAPLUS  
 CN Pyrazinecarbonitrile, 3,5-diamino-6-(2,3,5-trichlorophenyl)- (9CI) (CA  
 INDEX NAME)



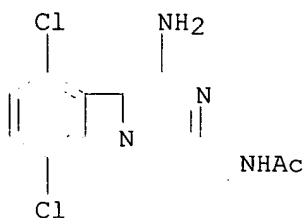
RN 212779-17-4 CAPLUS  
 CN 2,6-Pyrazinediamine, 3-methyl-5-(2,3,5-trichlorophenyl)- (9CI) (CA INDEX  
 NAME)



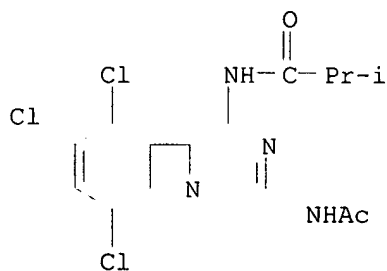
IT 212779-29-8P 212779-35-6P 212779-38-9P  
 212779-39-0P 212779-41-4P 212779-42-5P  
 212779-43-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of pyrazines as anticonvulsants)  
 RN 212779-29-8 CAPLUS  
 CN Acetamide, N-[6-amino-5-(2,3,5-trichlorophenyl)pyrazinyl]- (9CI) (CA  
 INDEX NAME)



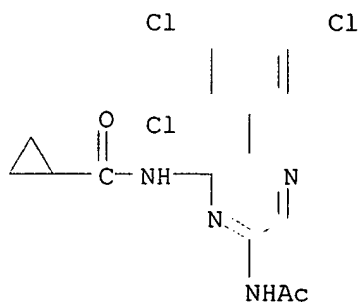
RN 212779-35-6 CAPLUS  
 CN Acetamide, N-[6-amino-5-(2,5-dichlorophenyl)pyrazinyl]- (9CI) (CA INDEX NAME)



RN 212779-38-9 CAPLUS  
 CN Propanamide, N-[6-(acetylamino)-3-(2,3,5-trichlorophenyl)pyrazinyl]-2-methyl- (9CI) (CA INDEX NAME)

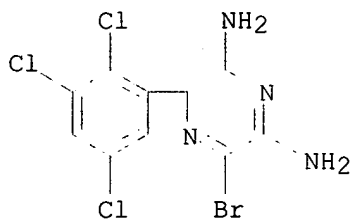


RN 212779-39-0 CAPLUS  
 CN Cyclopropanecarboxamide, N-[6-(acetylamino)-3-(2,3,5-trichlorophenyl)pyrazinyl]- (9CI) (CA INDEX NAME)



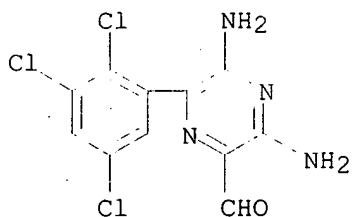
RN 212779-41-4 CAPLUS

CN 2,6-Pyrazinediamine, 3-bromo-5-(2,3,5-trichlorophenyl)- (9CI) (CA INDEX NAME)



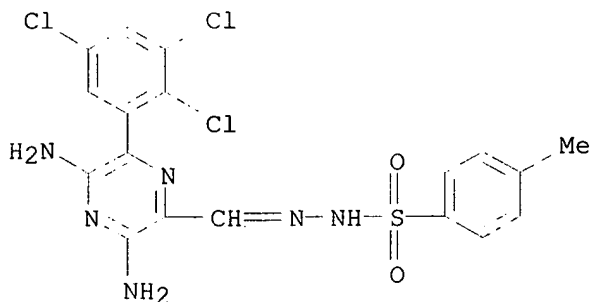
RN 212779-42-5 CAPLUS

CN Pyrazinecarboxaldehyde, 3,5-diamino-6-(2,3,5-trichlorophenyl)- (9CI) (CA INDEX NAME)



RN 212779-43-6 CAPLUS

CN Benzenesulfonic acid, 4-methyl-, [[3,5-diamino-6-(2,3,5-trichlorophenyl)pyrazinyl]methylene]hydrazide (9CI) (CA INDEX NAME)



124 ANSWER 24 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1998:184331 CAPLUS

DOCUMENT NUMBER: 128:244282

TITLE: Preparation of fluorescent cyclodextrins and imidazopyrazines as their intermediates

INVENTOR(S): Teranishi, Katsumichi; Komoda, Junko; Hisamatsu, Makoto; Yamada, Tetsuya

PATENT ASSIGNEE(S): Japan Maize Products Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

Searched by Barb O'Bryen, STIC 308-4291

FAMILY ACC. NUM. COUNT: 1

## PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10077286	A2	19980324	JP 1996-235584	19960905

OTHER SOURCE(S): MARPAT 128:244282  
GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Fluorescent cyclodextrins I, II [R1 = H, C1-6 alkyl, C1-6 alkoxy; R2 = H, C1-6 (un)substituted alkyl; R3 = Q; m = 0-5; n = 6-8], and their salts, useful for optical devices and sensors (no data), are prepd. by condensation of imidazopyrazines I, II (R1, R2, m = same as above; R3 = OH), or their salts with 6-monodeoxyaminocyclodextrin. I.HCl (R1 = MeO, R2 = CH2Ph, R3 = OH) was treated with mono-6-deoxy-6-amino-.alpha.-cyclodextrin and 1-ethyl-3-(3-dimethylaminopropyl)carbodiimide HCl salt at 0.degree. for 14 h in pyridine to give 26% I (R1 = MeO, R2 = CH2Ph, R3 = Q, n = 6).

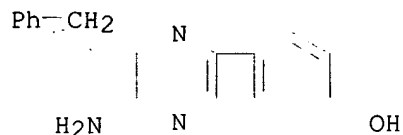
IT 37156-84-6 40040-81-1 119738-50-0

RL: RCT (Reactant)

(prepn. of fluorescent cyclodextrins and imidazopyrazines as their intermediates for optical devices and sensors)

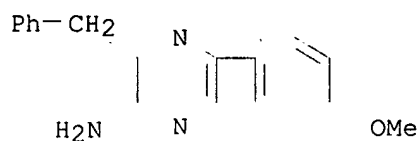
RN 37156-84-6 CAPLUS

CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



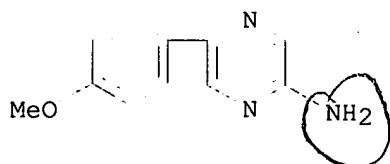
RN 40040-81-1 CAPLUS

CN Pyrazinamine, 5-(4-methoxyphenyl)-3-(phenylmethyl)- (9CI) (CA INDEX NAME)



RN 119738-50-0 CAPLUS

CN Pyrazinamine, 5-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



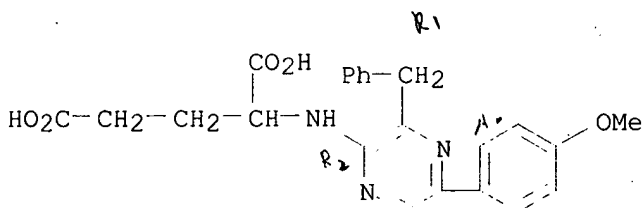
IT 204770-58-1P 204770-62-7P 204770-64-9P

**204770-67-2P 204770-68-3P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of fluorescent cyclodextrins and imidazopyrazines as their  
 intermediates for optical devices and sensors)

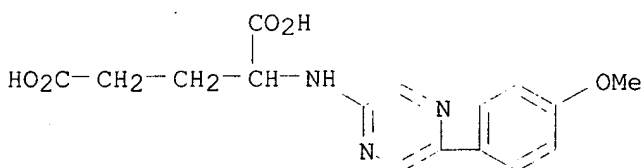
RN 204770-58-1 CAPLUS

CN Glutamic acid, N-[5-(4-methoxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI)  
 (CA INDEX NAME)



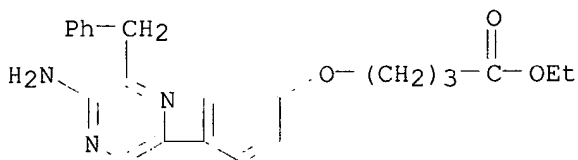
RN 204770-62-7 CAPLUS

CN Glutamic acid, N-[5-(4-methoxyphenyl)pyrazinyl]- (9CI) (CA INDEX NAME)



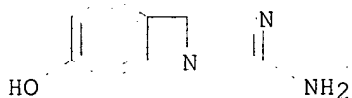
RN 204770-64-9 CAPLUS

CN Butanoic acid, 4-[4-[5-amino-6-(phenylmethyl)pyrazinyl]phenoxy]-, ethyl ester (9CI) (CA INDEX NAME)



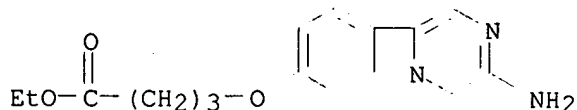
RN 204770-67-2 CAPLUS

CN Phenol, 4-(5-aminopyrazinyl)- (9CI) (CA INDEX NAME)

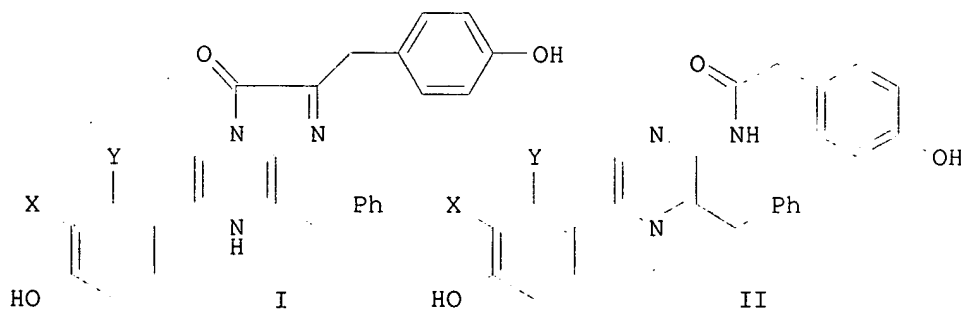


RN 204770-68-3 CAPLUS

CN Butanoic acid, 4-[4-(5-aminopyrazinyl)phenoxy]-, ethyl ester (9CI) (CA INDEX NAME)

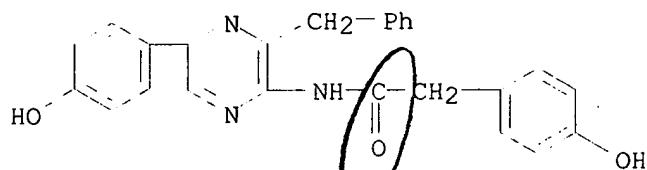


124 ANSWER 25 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1998:482779 CAPLUS  
 DOCUMENT NUMBER: 129:227130  
 TITLE: Bioluminescent properties of fluorinated semi-synthetic aequorins  
 AUTHOR(S): Hirano, Takashi; Ohmiya, Yoshihiro; Maki, Shojiro; Niwa, Haruki; Ohashi, Mamoru  
 CORPORATE SOURCE: Department of Applied Physics and Chemistry, The University of Electro-Communications, Tokyo, 182, Japan  
 SOURCE: Tetrahedron Lett. (1998), 39(31), 5541-5544  
 CODEN: TELEAY; ISSN: 0040-4039  
 PUBLISHER: Elsevier Science Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI

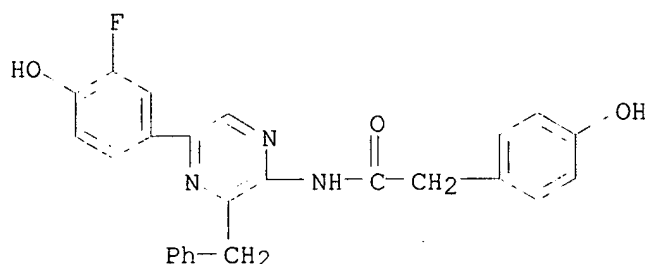


AB Bioluminescent properties of semi-synthetic aequorins contg. coelenterazine analogs I (X, Y = H, F) possessing fluoro group(s) on the 6-(4-hydroxyphenyl) group match the fluorescent behavior of the phenolate anions of the corresponding fluorinated coelenteramide analogs II. This indicates that the phenolate anion of coelenteramide is the light-emitter in aequorin bioluminescence.  
 IT 50611-86-4P 212842-94-9P 212842-96-1P  
 RL: BPR (Biological process); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process) (prepn. and bioluminescent properties of fluorinated semi-synthetic aequorins)  
 RN 50611-86-4 CAPLUS  
 CN Benzeneacetamide, 4-hydroxy-N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)

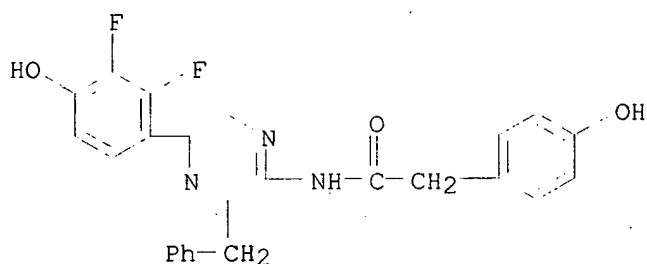




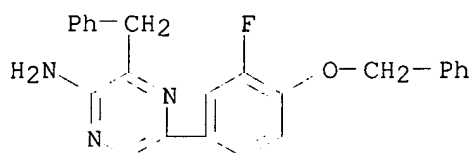
RN 212842-94-9 CAPLUS  
 CN Benzeneacetamide, N-[5-(3-fluoro-4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]-4-hydroxy- (9CI) (CA INDEX NAME)



RN 212842-96-1 CAPLUS  
 CN Benzeneacetamide, N-[5-(2,3-difluoro-4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]-4-hydroxy- (9CI) (CA INDEX NAME)

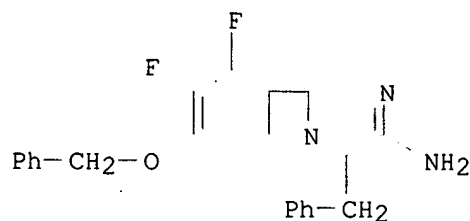


IT 212842-97-2P 212842-99-4P 212843-00-0P  
 212843-01-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and bioluminescent properties of fluorinated semi-synthetic  
 aequorins)  
 RN 212842-97-2 CAPLUS  
 CN Pyrazinamine, 5-[3-fluoro-4-(phenylmethoxy)phenyl]-3-(phenylmethyl)- (9CI)  
 (CA INDEX NAME)

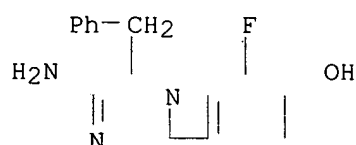


RN 212842-99-4 CAPLUS  
 CN Pyrazinamine, 5-[2,3-difluoro-4-(phenylmethoxy)phenyl]-3-(phenylmethyl)-

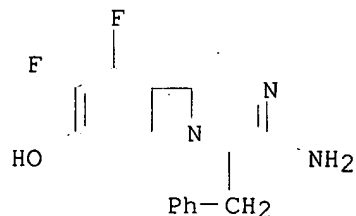
(9CI) (CA INDEX NAME)



RN 212843-00-0 CAPLUS  
 CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]-2-fluoro- (9CI) (CA INDEX NAME)



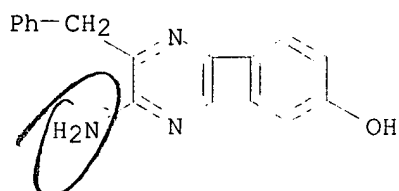
RN 212843-01-1 CAPLUS  
 CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]-2,3-difluoro- (9CI) (CA INDEX NAME)



~~124~~ ANSWER 26 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1998:713300 CAPLUS  
 DOCUMENT NUMBER: 130:52268  
 TITLE: Synthesis of <sup>13</sup>C-dehydrocoelenterazine and model studies on Symplectoteuthis squid bioluminescence  
 AUTHOR(S): Isobe, Minoru; Kuse, Masaki; Yasuda, Yoshio; Takahashi, Hiroyuki  
 CORPORATE SOURCE: Lab. of Organic Chemistry, School of Bioagricultural Sciences, Nagoya University, Nagoya, 464-8601, Japan  
 SOURCE: Bioorg. Med. Chem. Lett. (1998), 8(20), 2919-2924  
 CODEN: BMCLE8; ISSN: 0960-894X  
 PUBLISHER: Elsevier Science Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB In the photoprotein of an Okinawan squid bioluminescence of Symplectoteuthis oualaniensis L a dehydrocoelenterazine has been assigned as a chromophoric precursor to its apoprotein. To prove this mechanism, we have established new synthetic route to ca. 100% <sup>13</sup>C-incorporated dehydrocoelenterazine and coelenterazine at the neighboring carbon of the

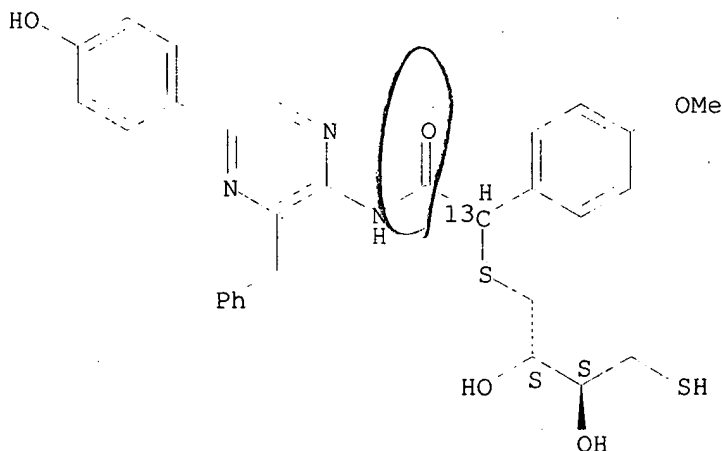
2-position of 2,3-dihydroimidazo-[1,2a]-pyrazinone skeleton.. This  $^{13}\text{C}$  enriched dehydrocoelenterazine readily converted in equil. between its adduct forms as a diastereomeric mixt. with glutathione (GSH) or dithiothreitol (DTT) compds. having sulfhydryl group. Structures of such adducts were fixed under acidic conditions and then discussed by NMR spectroscopy as well as absorbance and fluorescence spectra.

IT 37156-84-6, 2-Amino-3-benzyl-5-(4-hydroxyphenyl)pyrazine  
 RL: RCT (Reactant)  
 (synthesis of  $^{13}\text{C}$ -dehydrocoelenterazine and model studies on Symplectoteuthis squid bioluminescence)  
 RN 37156-84-6 CAPLUS  
 CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



IT 217481-40-8P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (synthesis of  $^{13}\text{C}$ -dehydrocoelenterazine and model studies on Symplectoteuthis squid bioluminescence)  
 RN 217481-40-8 CAPLUS  
 CN Benzeneacetamide-.alpha.- $^{13}\text{C}$ , .alpha.-[[ (2R,3R)-2,3-dihydroxy-4-mercaptobutyl]thio]-N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]-4-methoxy-, rel- (9CI) (CA INDEX NAME)

Relative stereochemistry.



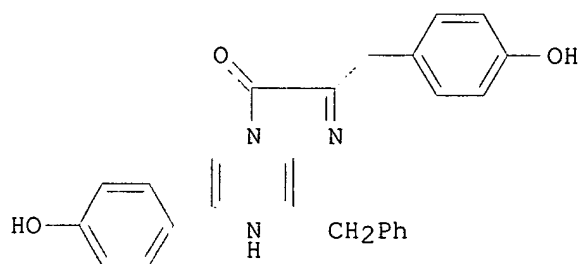
REFERENCE COUNT:  
 REFERENCE(S):

- 15  
 (1) Gassman, P; Tetrahedron Lett 1978, P3773 CAPLUS  
 (2) Goto, T; Tetrahedron Lett 1974, P2321 CAPLUS  
 (3) Hirano, T; Tetrahedron 1997, V53, P12903 CAPLUS  
 (4) Iio, H; Tetrahedron 1979, V35, P941 CAPLUS  
 (5) Inoue, S; Chem Lett 1977, P259 CAPLUS  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

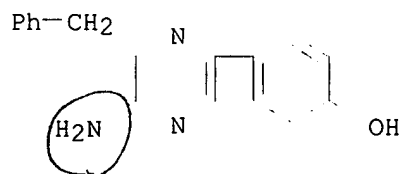
124 ANSWER 27 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1998:581652 CAPLUS  
 DOCUMENT NUMBER: 129:302482

Searched by Barb O'Bryen, STIC 308-4291

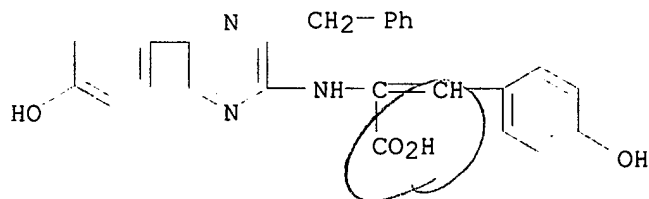
TITLE: Improved synthesis of Watasenia preluciferin  
 AUTHOR(S): Kakoi, Hisae; Inoue, Shoji  
 CORPORATE SOURCE: Fac. Pharm., Meijo Univ., Tenpaku, Nagoya, 4680-8503, Japan  
 SOURCE: Heterocycles (1998), 48(8), 1669-1672  
 CODEN: HTCYAM; ISSN: 0385-5414  
 PUBLISHER: Japan Institute of Heterocyclic Chemistry  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 129:302482  
 GI



AB A mixt. of 2-amino-3-benzyl-5-(p-hydroxyphenyl)pyrazine and a large excess of p-hydroxyphenylpyruvic acid heated at 130-140.degree.C in dioxane, without any reductive treatment, yielded Watasenia preluciferin (I) in 63% directly in a one batch process.  
 IT 37156-84-6  
 RL: RCT (Reactant)  
 (improved synthesis of Watasenia preluciferin)  
 RN 37156-84-6 CAPLUS  
 CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



IT. 74637-92-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (improved synthesis of Watasenia preluciferin)  
 RN 74637-92-6 CAPLUS  
 CN 2-Propenoic acid, 3-(4-hydroxyphenyl)-2-[[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]amino]- (9CI) (CA INDEX NAME)

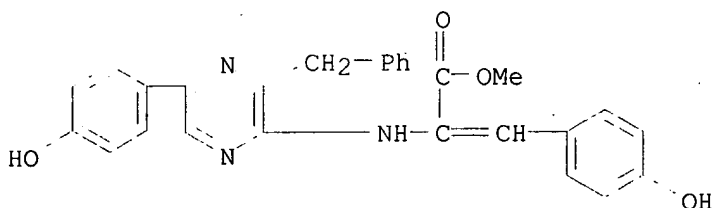


IT 74637-93-7P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(improved synthesis of Watasenia preluferin)

RN 74637-93-7 CAPLUS

CN 2-Propenoic acid, 3-(4-hydroxyphenyl)-2-[[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]amino]-, methyl ester (9CI) (CA INDEX NAME)



L24 ANSWER 28 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1998:454164 CAPLUS

DOCUMENT NUMBER: 129:203163

TITLE: Synthesis and enhanced chemiluminescence of new cyclomaltooligosaccharide (cyclodextrin) -bound 6-phenylimidazo[1,2-a]pyrazin-3(7H) -one

AUTHOR(S): Teranishi, Katsunori; Komoda, Atsuko; Hisamatsu, Makoto; Yamada, Tetsuya

CORPORATE SOURCE: Faculty of Bioresources, Mie University, Mie, 514, Japan

SOURCE: Carbohydr. Res. (1998), 306(1-2), 177-187

CODEN: CRBRAT; ISSN: 0008-6215

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB In order to provide chemiluminescent substrates that have high light-emitting efficiency in aq. soln., the structural design on 6-phenylimidazo[1,2-a]pyrazin-3(7H)-one compds. was studied in the covalent attachment of a light-producing chromophore to a cyclomaltooligosaccharide (cyclodextrin). The synthesis of cyclodextrin-bound 6-phenylimidazo[1,2-a]pyrazin-3(7H)-one compds. was achieved by the formation of an amido bond between a 6-phenylimidazo[1,2-a]pyrazin-3(7H)-one and a mono-6-amino-6-deoxycyclodextrin. The properties of oxygen-induced chemiluminescence of the synthesized cyclodextrin-bound light-emitting chromophores were investigated. The light-emitting efficiency in pH 8.3 phosphate buffer was remarkably dependent on the kind of bound cyclodextrin and the binding site between the chromophore and cyclodextrin. The light-emitting efficiency of a cyclodextrin-bound compd. in which cyclomaltoheptaose (.beta.-cyclodextrin) had been covalently attached to the 2-position of the imidazo[1,2-a]pyrazin-3(7H)-one ring system showed an up to 11-fold enhancement over that of a non-cyclodextrin chromophore, whereas attachment to cyclomaltohexaose (.alpha.-cyclodextrin) resulted in no enhancement. Moreover, this study indicated that the strategy that involves covalently attaching a light-producing chromophore onto a cyclodextrin for the enhancement of chemiluminescence is more efficient than the use of an aq. soln. contg. very large amts. of cyclodextrin.

IT 212253-66-2P 212253-67-3P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(synthesis and enhanced chemiluminescence of cyclomaltooligosaccharide cyclodextrin bound 6-phenylimidazo[1,2-a]pyrazin-3-one)

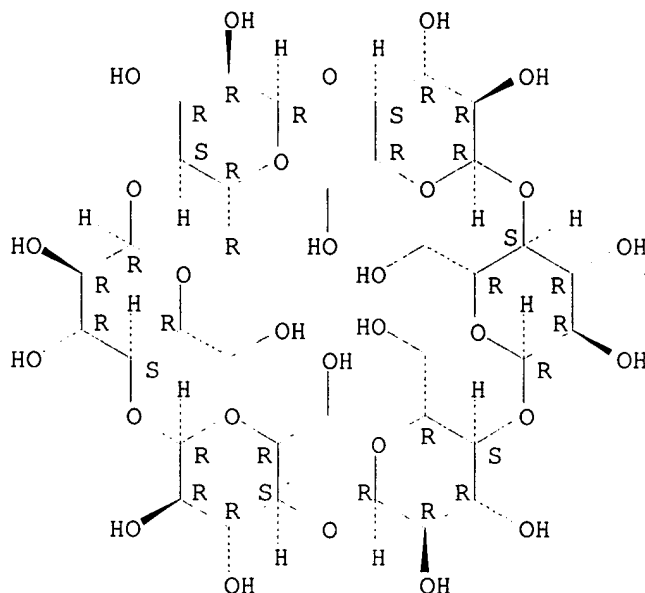
RN 212253-66-2 CAPLUS

CN .alpha.-Cyclodextrin, 6A-deoxy-6A-[[4-[[5-(4-methoxyphenyl)pyrazinyl]amino

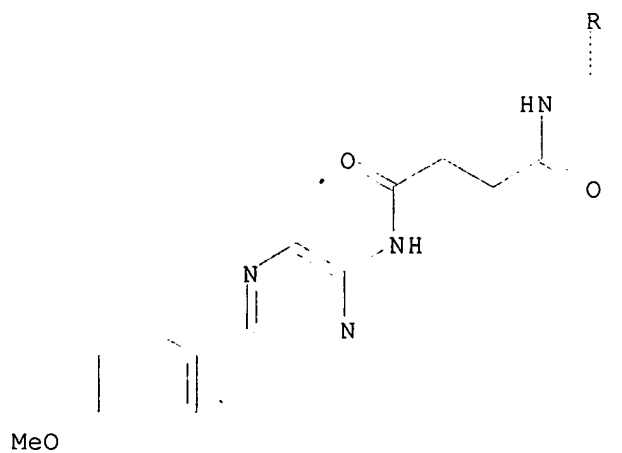
]-1,4-dioxobutyl]amino]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



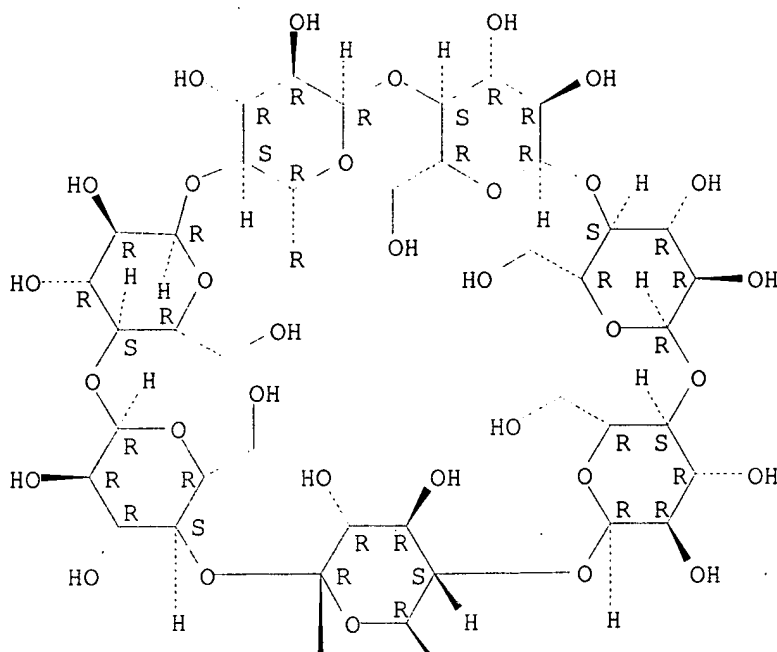
PAGE 2-A



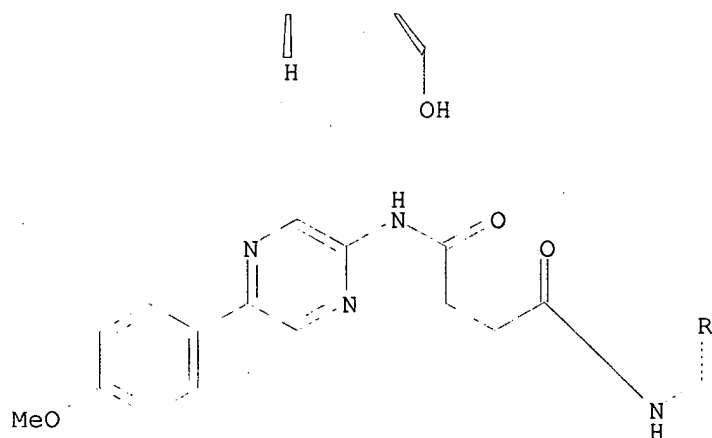
RN 212253-67-3 CAPLUS  
 CN .beta.-Cyclodextrin, 6A-deoxy-6A-[[4-[[5-(4-methoxyphenyl)pyrazinyl]amino]-1,4-dioxobutyl]amino]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 2-A



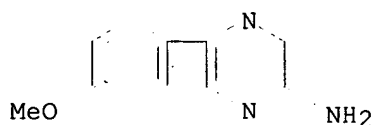
IT 119738-50-0

RL: RCT (Reactant)

(synthesis and enhanced chemiluminescence of cyclomaltooligosaccharide cyclodextrin bound 6-phenylimidazo[1,2-a]pyrazin-3-one)

RN 119738-50-0 CAPLUS

CN Pyrazinamine, 5-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)

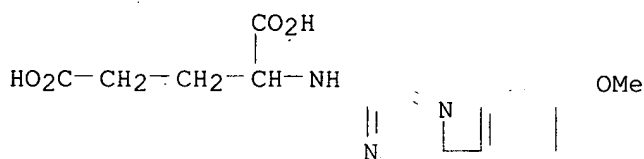


IT 204770-62-7P 204770-67-2P 204770-68-3P  
212253-65-1P 212253-68-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(synthesis and enhanced chemiluminescence of cyclomaltooligosaccharide  
cyclodextrin bound 6-phenylimidazo[1,2-a]pyrazin-3-one)

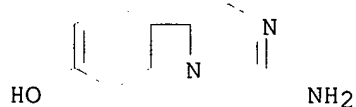
RN 204770-62-7 CAPLUS

CN Glutamic acid, N-[5-(4-methoxyphenyl)pyrazinyl]- (9CI) (CA INDEX NAME)



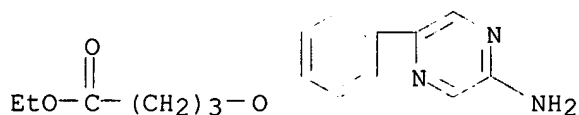
RN 204770-67-2 CAPLUS

CN Phenol, 4-(5-aminopyrazinyl)- (9CI) (CA INDEX NAME)



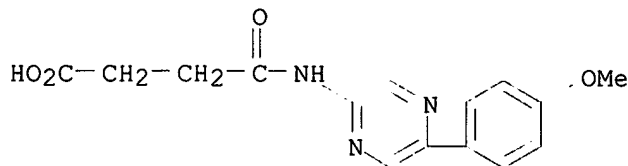
RN 204770-68-3 CAPLUS

CN Butanoic acid, 4-[4-(5-aminopyrazinyl)phenoxy]-, ethyl ester (9CI) (CA INDEX NAME)



RN 212253-65-1 CAPLUS

CN Butanoic acid, 4-[[5-(4-methoxyphenyl)pyrazinyl]amino]-4-oxo- (9CI) (CA INDEX NAME)

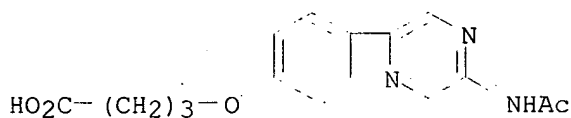


RN 212253-68-4 CAPLUS

CN Butanoic acid, 4-[4-[5-(acetylamino)pyrazinyl]phenoxy]- (9CI) (CA INDEX NAME)



NAME)



L24 ANSWER 29 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1998:554922 CAPLUS

DOCUMENT NUMBER: 129:272501

TITLE: Chemiluminescence of Cypridina luciferin analogs. Part 3. MCLA chemiluminescence with singlet oxygen generated by the retro-Diels-Alder reaction of a naphthalene endoperoxide

AUTHOR(S): Fujimori, Ken; Komiyama, Tomoko; Tabata, Hideo; Nojima, Takayuki; Ishiguro, Katsuya; Sawaki, Yasuhiko; Tatsuzawa, Hidetaka; Nakano, Minoru

CORPORATE SOURCE: Department of Chemistry, University of Tsukuba, Ibaraki, 305, Japan

SOURCE: Photochem. Photobiol. (1998), 68(2), 143-149

CODEN: PHCBAP; ISSN: 0031-8655

PUBLISHER: American Society for Photobiology

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The chemiluminescence of the Cypridina luciferin analog, 2-methyl-6-(p-methoxyphenyl)-3,7-dihydroimidazo[1,2-a]pyrazin-3-one (MCLA), with O<sub>2</sub> (1.DELTA.g) generated by the retro-Diels-Alder reaction of 3-(4'-methyl-1'-naphthyl)-propionic acid endoperoxide was studied in an aq. soln. with pH 7.12 at 37.degree.. The retro-Diels-Alder reaction occurs with a first-order rate const. of (4.16.+-.0.13) .times. 10<sup>-4</sup>/s to quant. yield O<sub>2</sub> (1.DELTA.g) and 3-(4'-methyl-1'-naphthyl)-propionic acid. MCLA consumed equimolar amts. of O<sub>2</sub> (1.DELTA.g) with a second-order rate const. (6.96.+-.0.27) .times. 10<sup>8</sup>/M/s to emit light in an aq. soln. with pH 7.12 at 37.degree.. The chemiluminescence spectrum was identified as the fluorescence spectrum of 2-acetylamin-5-(p-methoxyphenyl)pyrazine (OMCLA), a major chemiluminescence reaction. Chemiluminescence spectra and product yields for MCLA reactions with O<sub>2</sub> (1.DELTA.g), with O<sub>2</sub> (3.SIGMA.g-) and with superoxide anion radicals are identical, suggesting that all of these reactions occur via a common MCLA-2-hydroperoxide intermediate formed by a combination of MCLA radicals and superoxide anion radicals. We have established practical use of NEPO as an O<sub>2</sub> (1.DELTA.g) source and MCLA as a biol. probe for detecting O<sub>2</sub> (1.DELTA.g).

IT 144465-03-2

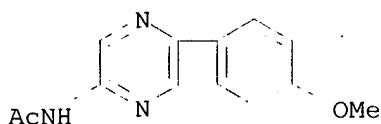
RL: PRP (Properties)

(chemiluminescence of Cypridina luciferin analogs: MCLA

chemiluminescence with singlet oxygen generated by retro-Diels-Alder reaction of a naphthalene endoperoxide)

RN 144465-03-2 CAPLUS

CN Acetamide, N-[5-(4-methoxyphenyl)pyrazinyl]- (9CI) (CA INDEX NAME)



L24 ANSWER 30 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1998:43515 CAPLUS

DOCUMENT NUMBER: 128:140550

TITLE: Substituent effects on the chemiluminescent properties of coelenterazine analogs

AUTHOR(S): Saito, Ryota; Hirano, Takashi; Niwa, Haruki; Ohashi, Mamoru

CORPORATE SOURCE: Dep. Appl. Physics and Chemistry, Univ. Electro-Communications, Chofu, 182, Japan

SOURCE: Chem. Lett. (1998), (1), 95-96

CODEN: CMLTAG; ISSN: 0366-7022

PUBLISHER: Chemical Society of Japan

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Chemiluminescence maxima and quantum yields of coelenterazine analogs possessing a substituent R [=CF<sub>3</sub>, F, H, OCH<sub>3</sub>, OH, N(CH<sub>3</sub>)<sub>2</sub>] at the para-position on the 6-Ph group were measured in DMSO. The result indicates that the variation of the electronic properties of R of these analogs caused the small change of the efficiency of chem. generation of a singlet excited light-emitter (.PHI.S).

IT 202338-15-6 202338-18-9 202338-20-3

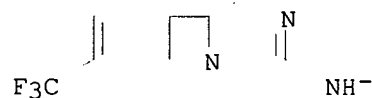
202338-21-4

RL: PRP (Properties)

(substituent effects on the chemiluminescent properties of coelenterazine analogs)

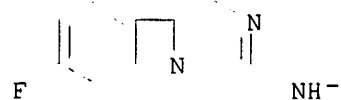
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CN Pyrazinamine, 5-[4-(trifluoromethyl)phenyl]-, ion(1-) (9CI) (CA INDEX NAME)



RN 202338-18-9 CAPLUS

CN Pyrazinamine, 5-(4-fluorophenyl)-, ion(1-) (9CI) (CA INDEX NAME)



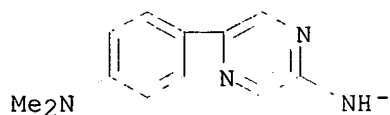
RN 202338-20-3 CAPLUS

CN Pyrazinamine, 5-(4-methoxyphenyl)-, ion(1-) (9CI) (CA INDEX NAME)



RN 202338-21-4 CAPLUS

CN Pyrazinamine, 5-[4-(dimethylamino)phenyl]-, ion(1-) (9CI) (CA INDEX NAME)



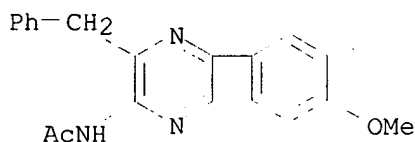
IT 49842-01-5P 50611-86-4P 196959-73-6P

196959-87-2P 196959-89-4P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(substituent effects on the chemiluminescent properties of  
coelenterazine analogs)

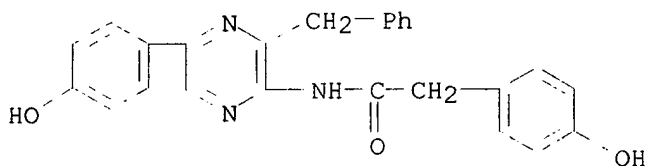
RN 49842-01-5 CAPLUS

CN Acetamide, N-[5-(4-methoxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA  
INDEX NAME)



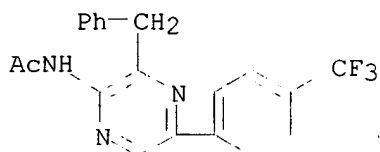
RN 50611-86-4 CAPLUS

CN Benzeneacetamide, 4-hydroxy-N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



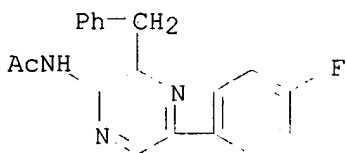
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CN Acetamide, N-[3-(phenylmethyl)-5-[4-(trifluoromethyl)phenyl]pyrazinyl]- (9CI) (CA INDEX NAME)

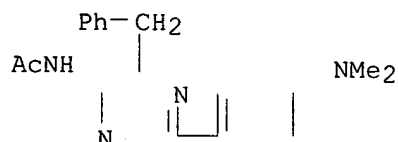


RN 196959-87-2 CAPLUS

CN Acetamide, N-[5-(4-fluorophenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA  
INDEX NAME)



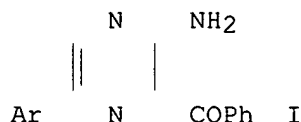
RN 196959-89-4 CAPLUS  
 CN Acetamide, N-[5-[4-(dimethylamino)phenyl]-3-(phenylmethyl)pyrazinyl]-  
 (9CI) (CA INDEX NAME)



124 ANSWER 31 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1997:752941 CAPLUS  
 DOCUMENT NUMBER: 128:22924  
 TITLE: Preparation of arylpyrazines  
 INVENTOR(S): Hibbert, Frank; Jones, Keith; Keenan, Martine  
 PATENT ASSIGNEE(S): Kings College London, UK; Hibbert, Frank; Jones, Keith; Keenan, Martine  
 SOURCE: PCT Int. Appl., 22 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9743267	A1	19971120	WO 1997-GB1227	19970506
W: CA, JP, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 914318	A1	19990512	EP 1997-920835	19970506
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
PRIORITY APPLN. INFO.:		GB 1996-9972	19960511	
		GB 1996-24653	19961127	
		WO 1997-GB1227	19970506	
OTHER SOURCE(S):		MARPAT 128:22924		
GI				



AB The title compds. I [Ar = naphthyl, thienyl, (un)substituted Ph] were prepd. by reaction of 5-halopyrazine with arylboronic acids ArB(OH)<sub>2</sub> in presence of a catalyst. E.g., a catalyst formed from bis(benzonitrile)palladium(II) chloride and 1,4-bis(diphenylphosphino)butane catalyzed the reaction of 2-amino-3-benzoyl-5-bromopyrazine and 4-methoxyphenylboronic acid to give 92% 2-amino-3-benzoyl-5-(4-methoxyphenyl)pyrazine (II). II may be used to prep. coelenterazine.

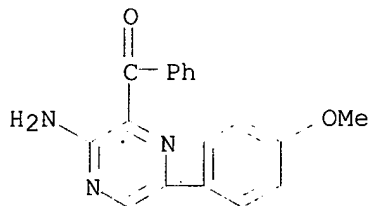
IT 180332-67-6P  
 RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic

preparation); PREP (Preparation)

(prepn. of arylpyrazines)

RN 180332-67-6 CAPLUS

CN Methanone, [3-amino-6-(4-methoxyphenyl)pyrazinyl]phenyl- (9CI) (CA INDEX NAME)



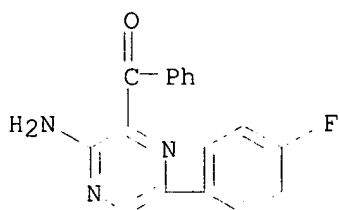
IT 180332-70-1P 180332-71-2P

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

(prepn. of arylpyrazines)

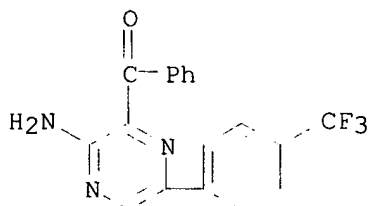
RN 180332-70-1 CAPLUS

CN Methanone, [3-amino-6-(4-fluorophenyl)pyrazinyl]phenyl- (9CI) (CA INDEX NAME)



RN 180332-71-2 CAPLUS

CN Methanone, [3-amino-6-[4-(trifluoromethyl)phenyl]pyrazinyl]phenyl- (9CI) (CA INDEX NAME)



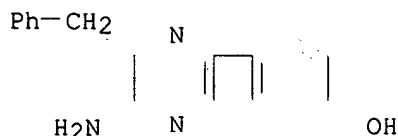
IT 37156-84-6P 187961-92-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)

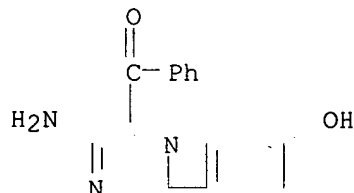
(prepn. of arylpyrazines)

RN 37156-84-6 CAPLUS

CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



RN 187961-92-8 CAPLUS  
 CN Methanone, [3-amino-6-(4-hydroxyphenyl)pyrazinyl]phenyl- (9CI) (CA INDEX NAME)



L24 ANSWER 32 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1997:190080 CAPLUS

DOCUMENT NUMBER: 126:182672

TITLE: Insecticidal compositions with both knock-down and long-lasting effect

INVENTOR(S): Mrusek, Klaus; Schuette, Manfred-Heinrich

PATENT ASSIGNEE(S): Bayer A.-G., Germany

SOURCE: Ger. Offen., 22 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

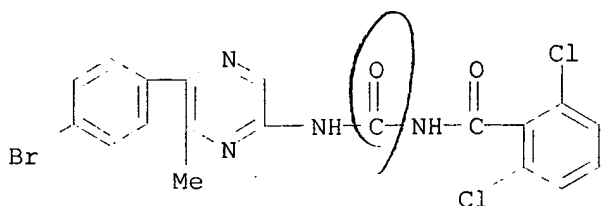
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19605773	A1	19970220	DE 1996-19605773	19960216
WO 9706687	A1	19970227	WO 1996-EP3455	19960805
W: AU, BB, BG, BR, BY, CA, CN, CZ, HU, JP, KR, KZ, LK, MX, NO, NZ, PL, RO, RU, SK, TR, UA, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9667424	A1	19970312	AU 1996-67424	19960805
AU 706903	B2	19990701		
EP 845944	A1	19980610	EP 1996-927686	19960805
EP 845944	B1	20001115		
R: BE, DE, ES, FR, GR, IT, NL, PT				
CN 1198657	A	19981111	CN 1996-197416	19960805
JP 11511152	T2	19990928	JP 1996-508896	19960805
BR 9610228	A	20000328	BR 1996-10228	19960805
ES 2152550	T3	20010201	ES 1996-927686	19960805
US 6270784	B1	20010807	US 1998-11451	19980210
PRIORITY APPLN. INFO.:			DE 1995-19530075 A1	19950816
			DE 1996-19605773 A	19960216
			WO 1996-EP3455 W	19960805

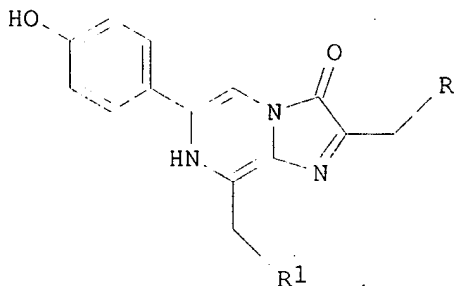
AB The title compns. comprise pyrethrins or pyrethroids and insect development inhibitors. Transfluthrin-flufenoxuron mixt. is the preferred

compn.

IT 59489-59-7D, mixts. with pyrethroids  
 RL: AGR (Agricultural use); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
 (insecticidal compns. with both knock-down and long-lasting effect)  
 RN 59489-59-7 CAPLUS  
 CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)



L24 ANSWER 33 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1997:635299 CAPLUS  
 DOCUMENT NUMBER: 127:293056  
 TITLE: Chemi- and bioluminescence of coelenterazine analogs possessing an adamantylmethyl group  
 AUTHOR(S): Hirano, Takashi; Negishi, Ryo; Yamaguchi, Mihoko; Chen, Feng Qi; Ohmiya, Yoshihiro; Tsuji, Frederick I.; Ohashi, Mamoru  
 CORPORATE SOURCE: Department of Applied Physics and Chemistry, The University of Electro-Communications, Chofu, 182, Japan  
 SOURCE: Tetrahedron (1997), 53(38), 12903-12916  
 CODEN: TETRAB; ISSN: 0040-4020  
 PUBLISHER: Elsevier  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI



AB Coelenterazine analogs (I) (R = Ad, 4-HOC6H4; R1 = Ph, Ad) possessing the adamantylmethyl group at the C2 or C8 position were prepd. to study their effects on chemi- and bioluminescence. Stability of the excited state coelenteramide analogs was significantly affected by the substitutions, resulting in a neutral amide emission of chemiluminescence in diglyme-acetate buffer and in a blue-shifted emission of bioluminescence in Tris-HCl buffer. Substitution of the adamantylmethyl group in the C8 position caused bioluminescence intensity to double. The 8-adamantylmethyl group may serve to orient the coelenterazine skeleton in a suitable position in the active site for efficient bioluminescence

activity. Results with semi-synthetic AQs contg. 8-adamantylmethyl analogs, and those of semi-synthetic AQs contg. 2-benzyl and 2-Me analogs, indicate that apoAQ and apoAQ C145,152,180S have the ability to recognize the C2 and C8 side-chains in coelenterazine during AQ regeneration.

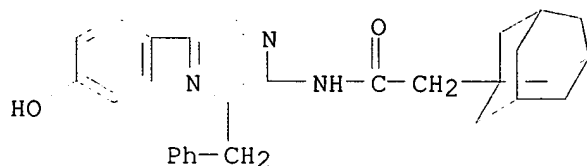
IT 196799-59-4P 196799-61-8P

RL: ANT (Analyte); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation)

(chemi- and bioluminescence of coelenterazine analogs possessing an adamantylmethyl group)

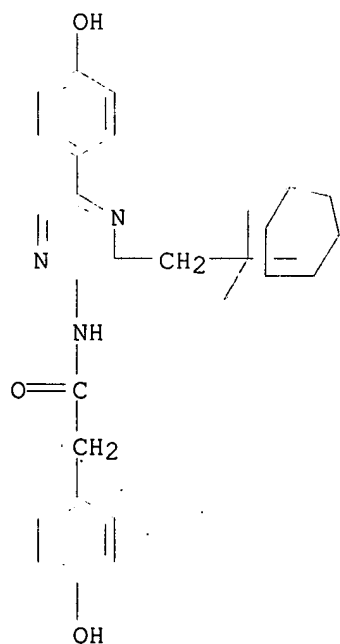
RN 196799-59-4 CAPLUS

CN Tricyclo[3.3.1.1<sup>3,7</sup>]decane-1-acetamide, N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



RN 196799-61-8 CAPLUS

CN Benzeneacetamide, 4-hydroxy-N-[5-(4-hydroxyphenyl)-3-(tricyclo[3.3.1.1<sup>3,7</sup>]dec-1-ylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



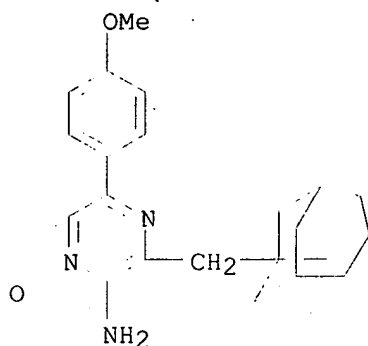
IT 196799-72-1P 196799-73-2P 196799-77-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(chemi- and bioluminescence of coelenterazine analogs possessing an adamantylmethyl group)

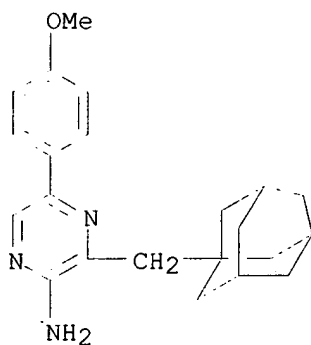
RN 196799-72-1 CAPLUS

CN Pyrazinamine, 5-(4-methoxyphenyl)-3-(tricyclo[3.3.1.1<sup>3,7</sup>]dec-1-ylmethyl)-, 1-oxide (9CI) (CA INDEX NAME)

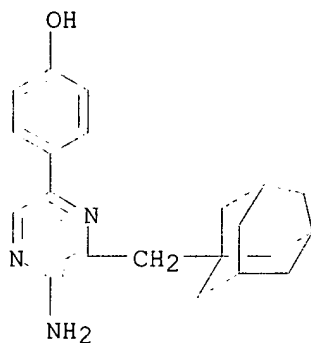




RN 196799-73-2 CAPLUS  
 CN Pyrazinamine, 5-(4-methoxyphenyl)-3-(tricyclo[3.3.1.3,7]dec-1-ylmethyl)-  
 (9CI) (CA INDEX NAME)



RN 196799-77-6 CAPLUS  
 CN Phenol, 4-[5-amino-6-(tricyclo[3.3.1.3,7]dec-1-ylmethyl)pyrazinyl]- (9CI)  
 (CA INDEX NAME)



L24 ANSWER 34 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1997:277912 CAPLUS  
 DOCUMENT NUMBER: 127:14563  
 TITLE: Mechanism of the redox reaction of the Aequorea green  
 fluorescent protein (GFP)  
 AUTHOR(S): Kojima, Satoshi; Hirano, Takashi; Niwa, Haruki;  
 Ohashi, Mamoru; Inouye, Satoshi; Tsuji, Frederick I.  
 CORPORATE SOURCE: Dep. Applied Phys. and Chemistry, The Univ.

SOURCE: Electro-Communications, Chofu, Tokyo, 182, Japan  
Tetrahedron Lett. (1997), 38(16), 2875-2878  
CODEN: TELEAY; ISSN: 0040-4039

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

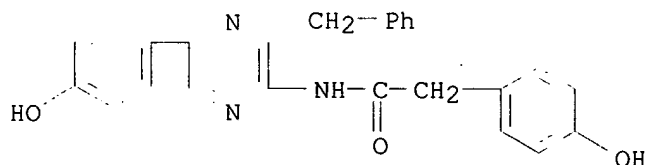
LANGUAGE: English

AB A model compd., 4-(4-hydroxyphenyl)methylideneimidazol-5-one, undergoes a reversible redox reaction identical to that of the Aequorea green fluorescent protein (GFP), strongly suggesting that the GFP chromophore is derived via the autoxidn. of a nonfluorescent dihydro precursor in dihydro-GFP.

IT 50611-86-4, Coelenteramide  
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); MFM (Metabolic formation); PRP (Properties); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process)  
(mechanism of the redox reaction of the Aequorea green fluorescent protein (GFP))

RN 50611-86-4 CAPLUS

CN Benzeneacetamide, 4-hydroxy-N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



L24 ANSWER 35 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1997:269721 CAPLUS

DOCUMENT NUMBER: 126:343245

TITLE: Synthesis and chemiluminescent properties of the peroxy acid compound as an intermediate of coelenterate luciferin luminescence

AUTHOR(S): Teranishi, Katsunori; Hisamatsu, Makoto; Yamada, Tetsuya

CORPORATE SOURCE: Faculty of Bioresources, Mie University, Tsu, 514, Japan

SOURCE: Tetrahedron Lett. (1997), 38(15), 2689-2692  
CODEN: TELEAY; ISSN: 0040-4039

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

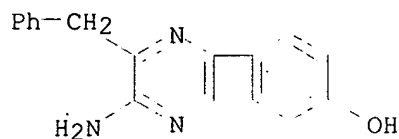
OTHER SOURCE(S): CASREACT 126:343245

AB The labile peroxy acid compd. has been synthesized and is one of the postulated intermediates in chemiluminescent reactions of coelenterate luciferin, Cypridina luciferin, and their analogs. The peroxy acid generated amide was accompanied by light in several solvent systems. In the non-polar solvent, the peroxy acid showed luminescence with one peak at 395 nm emitted from a neutral amide, whereas in polar solvents the peroxy acid generated light with 456-470 nm emitted from an anionic amide. The variations in luminescence are caused by the acidity of the peroxy acid group.

IT 37156-84-6  
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)  
(model for; prepn. and chemiluminescent properties of peroxy acid compd. as intermediate in coelenterate luciferin luminescence)

RN 37156-84-6 CAPLUS

CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



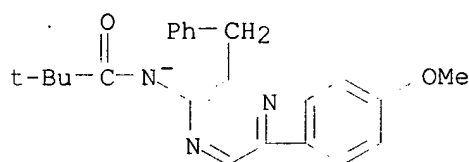
IT 175696-56-7

RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)

(prepn. and chemiluminescent properties of peroxy acid compd. as intermediate in coelenterate luciferin luminescence)

RN 175696-56-7 CAPLUS

CN Propanamide, N-[5-(4-methoxyphenyl)-3-(phenylmethyl)pyrazinyl]-2,2-dimethyl-, ion(1-) (9CI) (CA INDEX NAME)



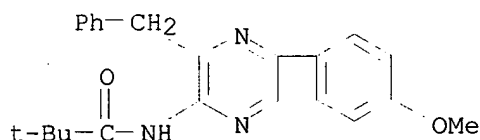
IT 156686-49-6P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(prepn. and chemiluminescent properties of peroxy acid compd. as intermediate in coelenterate luciferin luminescence)

RN 156686-49-6 CAPLUS

CN Propanamide, N-[5-(4-methoxyphenyl)-3-(phenylmethyl)pyrazinyl]-2,2-dimethyl- (9CI) (CA INDEX NAME)



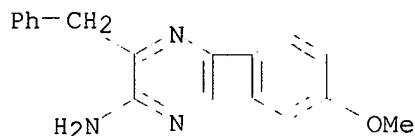
IT 40040-81-1

RL: RCT (Reactant)

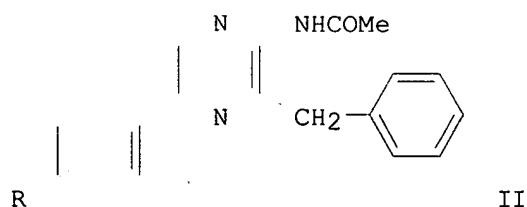
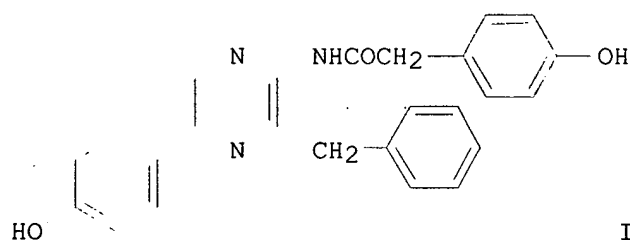
(prepn. and chemiluminescent properties of peroxy acid compd. as intermediate in coelenterate luciferin luminescence)

RN 40040-81-1 CAPLUS

CN Pyrazinamine, 5-(4-methoxyphenyl)-3-(phenylmethyl)- (9CI) (CA INDEX NAME)



ACCESSION NUMBER: 1997:637106 CAPLUS  
 DOCUMENT NUMBER: 127:293055  
 TITLE: Solvent and substituent effects on the fluorescent properties of coelenteramide analogs  
 AUTHOR(S): Saito, Ryota; Hirano, Takashi; Niwa, Haruki; Ohashi, Mamoru  
 CORPORATE SOURCE: Department of Applied Physics and Chemistry, University of Electro-Communications, Chofu, 182, Japan  
 SOURCE: J. Chem. Soc., Perkin Trans. 2 (1997), (9), 1711-1716  
 CODEN: JCPKBH; ISSN: 0300-9580  
 PUBLISHER: Royal Society of Chemistry  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI



AB Coelenteramide (I) is the light emitter in aequorin bioluminescence. To establish the fluorescent character of I, the fluorescence properties of I and a series of its analogs, II (R = CF<sub>3</sub>, F, H, OMe, OH, NMe<sub>2</sub>), have been investigated in solvents of various polarity. The fluorescence emission maxima of I and II (R = OMe, OH, NMe<sub>2</sub>), possessing an electron-donating group shift to lower energy with increasing solvent polarity, while those of the analogs II (R = CF<sub>3</sub>, F, H) are independent of the solvent polarity. The linear correlation between the fluorescence maxima of I and II (R = OMe, OH, NMe<sub>2</sub>) and the solvent polarity scales can be explained by formation of the singlet excited state with a charge-transfer (CT) character. The quantum yields of CT fluorescence of I and II (R = OMe, OH, NMe<sub>2</sub>) have been found to be higher than those of II (R = CF<sub>3</sub>, F, H). These results indicate that the solvatochromic fluorescence of I originates from the CT excited state and the existence of an electron donating hydroxy group on the 5-Ph group is essential for detg. a wavelength and a high fluorescence quantum yield of aequorin bioluminescence.

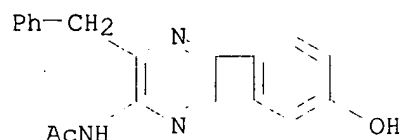
IT 49842-00-4P 49842-01-5P 50611-86-4P,

Coelenteramide 196959-73-6P 196959-87-2P  
196959-89-4P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(solvent and substituent effects on the fluorescent properties of  
coelenteramide analogs)

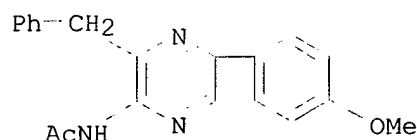
RN 49842-00-4 CAPLUS

CN Acetamide, N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA  
INDEX NAME)



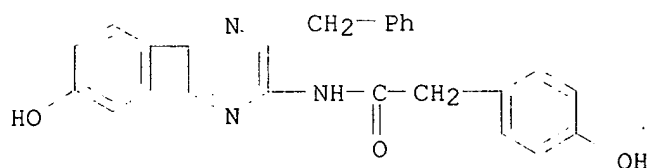
RN 49842-01-5 CAPLUS

CN Acetamide, N-[5-(4-methoxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA  
INDEX NAME)



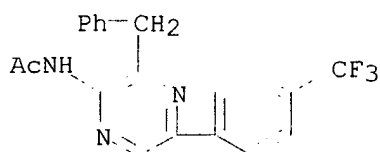
RN 50611-86-4 CAPLUS

CN Benzeneacetamide, 4-hydroxy-N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



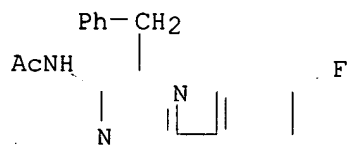
RN 196959-73-6 CAPLUS

CN Acetamide, N-[3-(phenylmethyl)-5-[4-(trifluoromethyl)phenyl]pyrazinyl]- (9CI) (CA INDEX NAME)

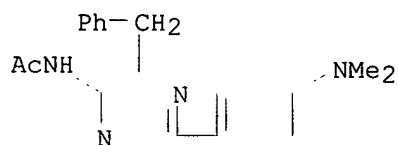


RN 196959-87-2 CAPLUS

CN Acetamide, N-[5-(4-fluorophenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA  
INDEX NAME)

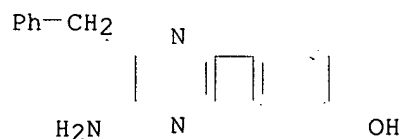


RN 196959-89-4 CAPLUS  
 CN Acetamide, N-[5-[4-(dimethylamino)phenyl]-3-(phenylmethyl)pyrazinyl]-  
 (9CI) (CA INDEX NAME)

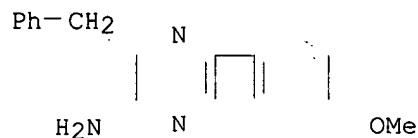


IT 37156-84-6P 40040-81-1P 123437-73-0P  
 123695-78-3P 123695-79-4P 196959-74-7P  
 196959-75-8P 196959-76-9P 196959-81-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (solvent and substituent effects on the fluorescent properties of  
 coelenteramide analogs)

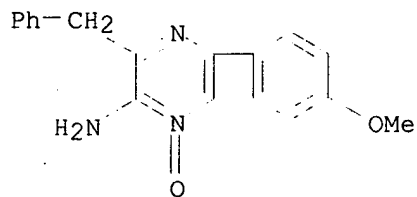
RN 37156-84-6 CAPLUS  
 CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



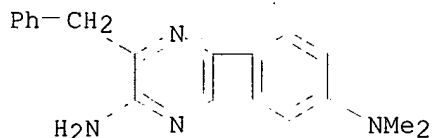
RN 40040-81-1 CAPLUS  
 CN Pyrazinamine, 5-(4-methoxyphenyl)-3-(phenylmethyl)- (9CI) (CA INDEX NAME)



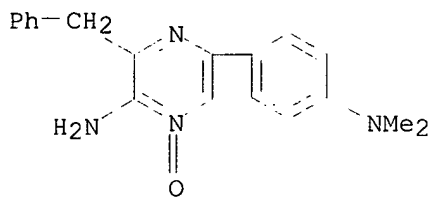
RN 123437-73-0 CAPLUS  
 CN Pyrazinamine, 5-(4-methoxyphenyl)-3-(phenylmethyl)-, 1-oxide (9CI) (CA  
 INDEX NAME)



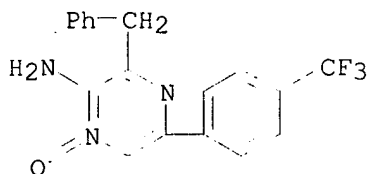
RN 123695-78-3 CAPLUS  
 CN Pyrazinamine, 5-[4-(dimethylamino)phenyl]-3-(phenylmethyl)- (9CI) (CA INDEX NAME)



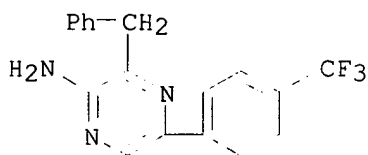
RN 123695-79-4 CAPLUS  
 CN Pyrazinamine, 5-[4-(dimethylamino)phenyl]-3-(phenylmethyl)-, 1-oxide (9CI) (CA INDEX NAME)



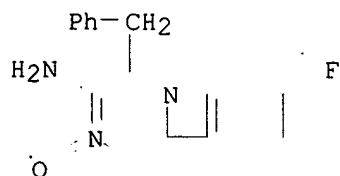
RN 196959-74-7 CAPLUS  
 CN Pyrazinamine, 3-(phenylmethyl)-5-[4-(trifluoromethyl)phenyl]-, 1-oxide (9CI) (CA INDEX NAME)



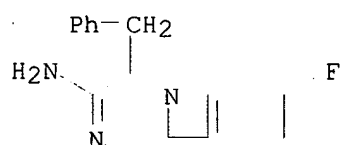
RN 196959-75-8 CAPLUS  
 CN Pyrazinamine, 3-(phenylmethyl)-5-[4-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



RN 196959-76-9 CAPLUS  
 CN Pyrazinamine, 5-(4-fluorophenyl)-3-(phenylmethyl)-, 1-oxide (9CI) (CA INDEX NAME)



RN 196959-81-6 CAPLUS  
 CN Pyrazinamine, 5-(4-fluorophenyl)-3-(phenylmethyl)- (9CI) (CA INDEX NAME)



L24 ANSWER 37 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1997:590066 CAPLUS

DOCUMENT NUMBER: 127:257127

TITLE: Structural requirements for potent Na/H exchange inhibitors obtained from quantitative structure-activity relationships monocyclic and bicyclic aroylguanidines

AUTHOR(S): Yamamoto, Takeshi; Hori, Manabu; Watanabe, Ikuo; Tsutsui, Hisayoshi; Harada, Kengo; Ikeda, Shoji; Ohtaka, Hiroshi

CORPORATE SOURCE: Product R and D Laboratory, Kanebo Ltd., Osaka, 534, Japan

SOURCE: Chem. Pharm. Bull. (1997), 45(8), 1282-1286

CODEN: CPBTAL; ISSN: 0009-2363

PUBLISHER: Pharmaceutical Society of Japan

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The quant. structure-activity relationship (QSAR) of N-(3-amino-6-chloro-5-ethylisopropylaminopyrazine-4-carbonyl)guanidine (EIPA) lac and its derivs. as Na/H exchange inhibitors was analyzed using the steric parameters and an indicator variable. The results indicated that bicyclic aroylguanidines might have Na/H exchange inhibitory activity. Therefore, various bicyclic aroylguanidines were synthesized and tested for Na/H exchange inhibitory activity. The QSAR study of the bicyclic aroylguanidines showed that hydrophobic bicyclic rings seemed to be preferable for potent activity. The hydrophobicity of the aroyl ring moiety was thought to be particularly important. Thus, the QSAR of EIPA and its derivs. was re-analyzed using hydrophobicity and steric parameters. The results indicated that high hydrophobicity of the pseudo-ring moiety and a substituent of appropriate length at the position corresponding to the 5-position of the naphthalene ring enhance the activity. As expected from the results, 5-bromo-2-naphthoylguanidine 3b and 5-methoxy-2-naphthoylguanidine 3c exhibited strong activity. These findings will be helpful to design new, potent Na/H exchange inhibitors.

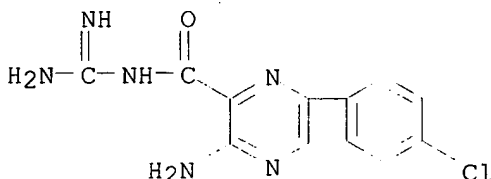


IT 1634-17-9

RL: BAC (Biological activity or effector, except adverse); PRP  
(Properties); BIOL (Biological study)  
(structure-activity relationships monocyclic and bicyclic  
aroylguanidines as Na/H exchange inhibitors)

RN 1634-17-9 CAPLUS

CN Pyrazinecarboxamide, 3-amino-N-(aminoiminomethyl)-6-(4-chlorophenyl)-  
(9CI) (CA INDEX NAME)



L24 ANSWER 38 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1997:138685 CAPLUS

DOCUMENT NUMBER: 126:211955

TITLE: Highly efficient and flexible total synthesis of  
coelenterazine

AUTHOR(S): Keenan, Martine; Jones, Keith; Hibbert, Frank

CORPORATE SOURCE: Department Chemistry, King's College London, Strand,  
London, WC2R 2LS, UK

SOURCE: Chem. Commun. (Cambridge) (1997), (3), 323-324

CODEN: CHCOFS; ISSN: 1359-7345

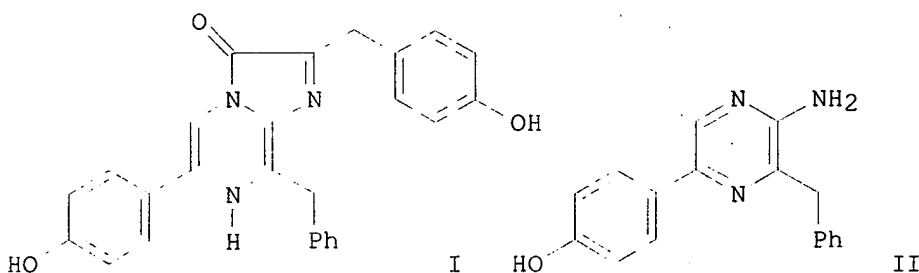
PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 126:211955

GI



AB A new total synthesis of the bioluminescent chromophore coelenterazine (I)  
was described. The synthesis was achieved via the cyclocondensation  
reaction of pyrazine II with 4-AcOC6H4CH2COCHO.

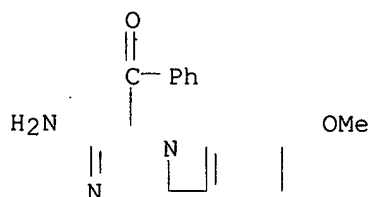
IT 180332-67-6

RL: RCT (Reactant)

(highly efficient and flexible total synthesis of coelenterazine)

RN 180332-67-6 CAPLUS

CN Methanone, [3-amino-6-(4-methoxyphenyl)pyrazinyl]phenyl- (9CI) (CA INDEX  
NAME)

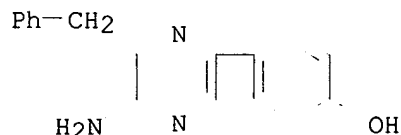


IT 37156-84-6P 187961-92-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(highly efficient and flexible total synthesis of coelenterazine)

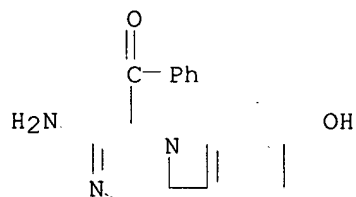
RN 37156-84-6 CAPLUS

CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



RN 187961-92-8 CAPLUS

CN Methanone, [3-amino-6-(4-hydroxyphenyl)pyrazinyl]phenyl- (9CI) (CA INDEX NAME)

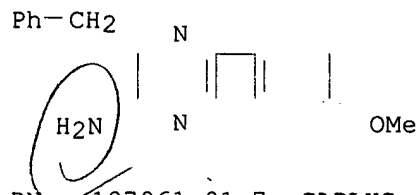


IT 40040-81-1P 187961-91-7P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(highly efficient and flexible total synthesis of coelenterazine)

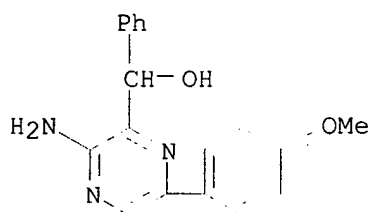
RN 40040-81-1 CAPLUS

CN Pyrazinamine, 5-(4-methoxyphenyl)-3-(phenylmethyl)- (9CI) (CA INDEX NAME)

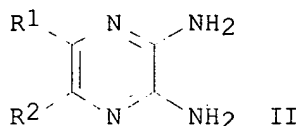
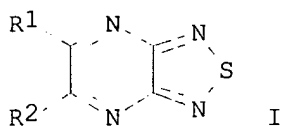


RN 187961-91-7 CAPLUS

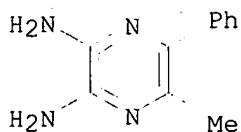
CN Pyrazinemethanol, 3-amino-6-(4-methoxyphenyl)-.alpha.-phenyl- (9CI) (CA INDEX NAME)



L24 ANSWER 39 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1997:481831 CAPLUS  
 DOCUMENT NUMBER: 127:205546  
 TITLE: Studies of pyrazines. Part 33. Synthesis of  
 2,3-diaminopyrazines via [1,2,5]thiadiazolo[3,4-  
 b]pyrazines  
 AUTHOR(S): Sato, Nobuhiro; Mizuno, Hajime  
 CORPORATE SOURCE: Department Chemistry, Yokohama City University,  
 Yokohama, 236, Japan  
 SOURCE: J. Chem. Res., Synop. (1997), (7), 250-251  
 CODEN: JRPSDC; ISSN: 0308-2342  
 PUBLISHER: Royal Society of Chemistry  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 127:205546  
 GI



AB The syntheses of [1,2,5]thiadiazolo[3,4-b]pyrazines I (R1 = H, Me, Ph, R2  
 = H; R1 = Me, R2 = H, Me; R1 = Ph, R2 = Me; R1 = R2 = Ph) as well as their  
 redn. to 2,3-diaminopyrazines II are described.  
 IT **32493-84-8P**  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and redn. of thiadiazolopyrazines to diaminopyrazines)  
 RN 32493-84-8 CAPLUS  
 CN 2,3-Pyrazinediamine, 5-methyl-6-phenyl- (9CI) (CA INDEX NAME)



~~L24~~ ANSWER 40 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1998:522957 CAPLUS  
 DOCUMENT NUMBER: 129:287445  
 TITLE: Oversea research scholar report in marine biological  
 laboratory from february 1st to may 31st, 1996: 3,

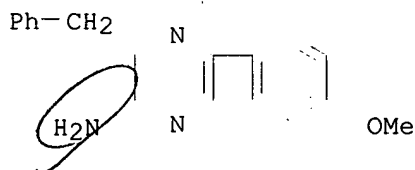
7-Dihydroimidazo-[1, 2-a]pyrazin-3-ones as chemiluminescent probe with improved sensitivity to superoxide ion

AUTHOR(S): Teranishi, Katsunori  
 CORPORATE SOURCE: Faculty of Bioresources, Mie University, Mie, 514-8507, Japan  
 SOURCE: Bull. Fac. Bioresour., Mie Univ. (1997), 19, 29-43  
 CODEN: BFBUEF; ISSN: 0915-0471  
 PUBLISHER: Mie Daigaku Seibutsu Shigengakubu  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

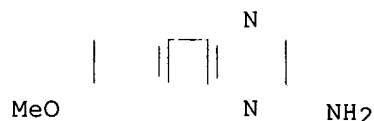
AB Improved chemiluminescent probes for superoxide ion are described. Eleven novel coelenterazine analogs, having the common structure of 3,7-dihydroimidazo-[1,2-a]pyrazin-3-one ring system (I), were synthesized. The properties of superoxide ion-triggered chemiluminescence of these compds., coelenterazine and 3 known coelenterazine analogs in the hypoxanthine-xanthine oxidase (hypoxanthine-XO) system were investigated, clarifying that alkyl substitution at the C-5 position of I, except for cyclization between the C-5 position and the Ph group at the C-6 position, drastically reduces the intensity of superoxide ion-dependent chemiluminescence. The luminescent intensity of the bridged analog was 33-fold stronger than that of 2-methyl-6-(4-methoxyphenyl)-3,7-dihydroimidazo-[1,2-a]pyrazin-3-one (MCLA), which is the best of the Cypridina luciferin analogs used as chemiluminescent probe, at the most optimal concn. of luminescent substrates in the simple hypoxanthine-XO system. Cyclodextrin-bound coelenterazine analogs showed desirable properties; soly. in water was suitable and the superoxide-dependent chemiluminescent intensity was stronger than that of MCLA and was not influenced by bovine serum albumin.

IT 40040-81-1 119738-50-0  
 RL: RCT (Reactant)  
 (prepn. of dihydroimidazopyrazinones as chemiluminescent probes with improved sensitivity to superoxide ion)

RN 40040-81-1 CAPLUS  
 CN Pyrazinamine, 5-(4-methoxyphenyl)-3-(phenylmethyl)- (9CI) (CA INDEX NAME)



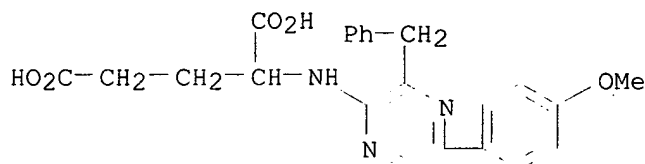
RN 119738-50-0 CAPLUS  
 CN Pyrazinamine, 5-(4-methoxyphenyl)-3-(phenylmethyl)- (9CI) (CA INDEX NAME)



IT 204770-58-1P 204770-62-7P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of dihydroimidazopyrazinones as chemiluminescent probes with improved sensitivity to superoxide ion)

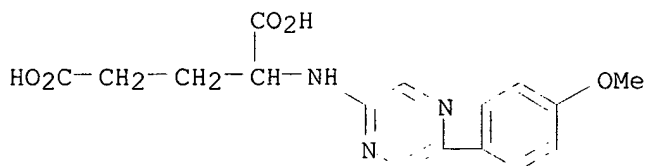
RN 204770-58-1 CAPLUS  
 CN Glutamic acid, N-[5-(4-methoxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI)

(CA INDEX NAME)



RN 204770-62-7 CAPLUS

CN Glutamic acid, N-[5-(4-methoxyphenyl)pyrazinyl]- (9CI) (CA INDEX NAME)



L24 ANSWER 41 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1996:551083 CAPLUS

DOCUMENT NUMBER: 125:181512

TITLE: Optically active compound, liquid crystal composition containing the same and liquid crystal device

INVENTOR(S): Takiguchi, Takao; Iwaki, Takashi; Tokano, Goji; Kosaka, Yoko; Nakamura, Shinichi

PATENT ASSIGNEE(S): Canon Kk, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 39 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

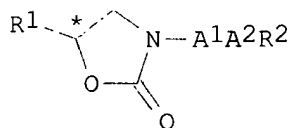
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08151577	A2	19960611	JP 1994-319499	19941130
OTHER SOURCE(S):		MARPAT 125:181512		

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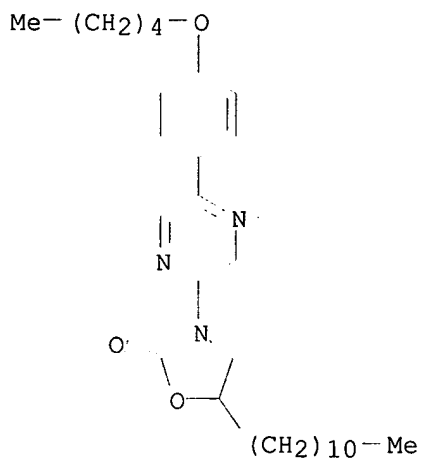
AB The title compd. is represented by I (R1, R2 = C2-20 alkyl; A1 = pyrimidine-2,5-diyl, pyridine-2,5-diyl, etc.; A2 = A1, single bond, 1,4-phenylene, 1,4-cyclohexylene, 1,3-dioxane-2,5-diyl, 1,3-dithiane-2,5-diyl). The compn. contains 1-80 % of the compd. The compn. shows a chiral smectic phase. The device showed improved switching characteristics suitable for liq. crystal displays and liq. crystal shutters.

IT 180845-17-4

RL: DEV (Device component use); USES (Uses)  
 (optically active compd. for liq. crystal compn. of liq. crystal display)

RN 180845-17-4 CAPLUS

CN 2-Oxazolidinone, 3-[5-[4-(pentyloxy)phenyl]pyrazinyl]-5-undecyl- (9CI)  
 (CA INDEX NAME)



L24 ANSWER 42 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1996:573434 CAPLUS

DOCUMENT NUMBER: 125:300674

TITLE: Low-temperature photooxygenation of coelenterate  
 luciferin analog synthesis and proof of  
 1,2-dioxetanone as luminescence intermediate

AUTHOR(S): Usami, Ken; Isobe, Minoru

CORPORATE SOURCE: Laboratory Organic Chemistry, Nagoya Univ., Chikusa,  
 464-01, Japan

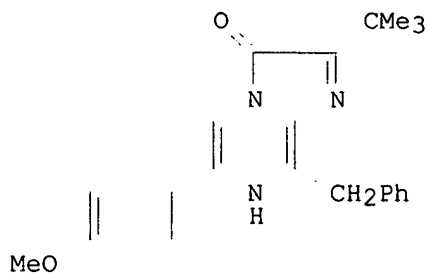
SOURCE: Tetrahedron (1996), 52(37), 12061-12090

CODEN: TETRAB; ISSN: 0040-4020

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



AB Coelenterate luciferin analog having bulky tert-Bu group at the 2-position  
 I was suitable for studies on chemiluminescence under various conditions.  
 Photooxygenation of the analog(s) at low temp. (-78.degree.C) afforded  
 luminous intermediates which were proved as peroxides by redn. with PPh3

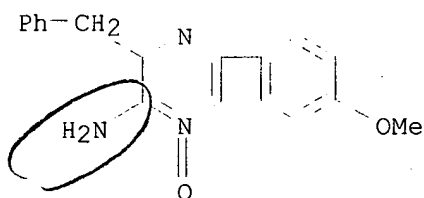
with resultant loss of luminescence ability. In order to clarify these structures of accumulated luminous intermediates by means of  $^{13}\text{C}$  NMR, three  $^{13}\text{C}$  enriched analogs were synthesized at the 2, 3 and 5 positions of 3,7-dihydroimidazo[1,2-a]pyrazin-3-one skeleton in 99% enrichment with site-specificity. These  $^{13}\text{C}$ -enriched coelenterate luciferin analogs were photooxygenated at  $-78^\circ\text{C}$  to form two peroxidic products as luminescent intermediates. Structures of these unstable intermediates were deduced by means of  $^{13}\text{C}$ . Photooxygenation in a mixt. of  $\text{CF}_3\text{CD}_2\text{OD}$  and  $\text{CD}_3\text{OD}$  as highly protic solvents afforded the dioxetanone and 2-hydroperoxide. These two peroxides emitted light independently at different temps. either at 400 nm (neutral species) and/or 475 nm (anionic species) after dilg. to  $10^{-5}$  M in diglyme (DGM) contg. acid or base.

IT 123437-73-0P 182924-46-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(low-temp. photooxygenation of coelenterate luciferin analog synthesis and proof of 1,2-dioxetanone as luminescence intermediate)

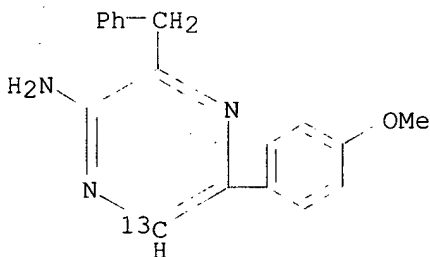
RN 123437-73-0 CAPLUS

CN Pyrazinamine, 5-(4-methoxyphenyl)-3-(phenylmethyl)-, 1-oxide (9CI) (CA INDEX NAME)



RN 182924-46-5 CAPLUS

CN Pyrazinamine-6- $^{13}\text{C}$ , 5-(4-methoxyphenyl)-3-(phenylmethyl)- (9CI) (CA INDEX NAME)



~~124~~ ANSWER 43 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1996:711286 CAPLUS

DOCUMENT NUMBER: 126:59796

TITLE: Studies on the mechanism of chemiluminescence: synthesis and chemiluminescent properties of the 5-hydroperoxide analog of coelenterate luciferin

AUTHOR(S): Teranishi, Katsunori; Hisamatsu, Makoto; Yamada, Tetsuya

CORPORATE SOURCE: Faculty Bioresources, Mie Univ., Mie, 514, Japan

SOURCE: Tetrahedron Lett. (1996), 37(46), 8425-8428

CODEN: TELEAY; ISSN: 0040-4039

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The 5-hydroperoxide analog of coelenterate luciferin has been synthesized and is one of the postulated intermediates in chemiluminescent reactions of coelenterate luciferin, Cypridina luciferin, and its analogs. The 5-hydroperoxide analog emitted weak light in chemiluminescent reactions in several solvent systems. However, it did not generate any amide. This research leads to the conclusion that 5-hydroperoxide is not an important intermediate in chemiluminescent reactions.

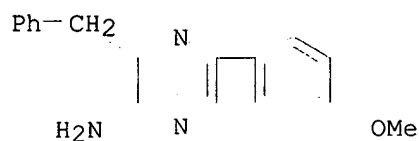
IT 40040-81-1

RL: RCT (Reactant)

(prepn. and chemiluminescent properties of the 5-hydroperoxide analog of coelenterate luciferin)

RN 40040-81-1 CAPLUS

CN Pyrazinamine, 5-(4-methoxyphenyl)-3-(phenylmethyl)- (9CI) (CA INDEX NAME)



L24 ANSWER 44 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1996:385403 CAPLUS

DOCUMENT NUMBER: 125:167652

TITLE: A Suzuki coupling approach to pyrazines related to coelenterazine

AUTHOR(S): Jones, Keith; Keenan, Martine; Hibbert, Frank

CORPORATE SOURCE: Dep. Chem., King's Coll. London, London, WC2R 2LS, UK

SOURCE: Synlett (1996), (6), 509-510

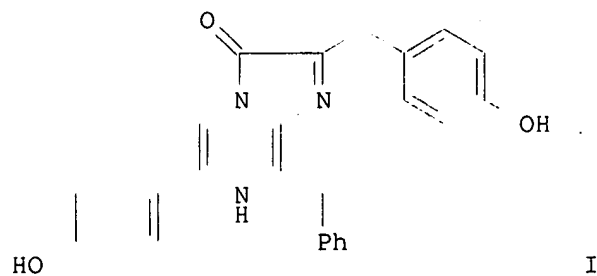
CODEN: SYNLES; ISSN: 0936-5214

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 125:167652

GI



AB 2-Amino-3-benzoyl-5-bromopyrazine is prepd. from 2-chloropyrazine in 4 steps and its transition metal-catalyzed Suzuki coupling to arylboronic acids  $\text{ArB(OH)}_2$  ( $\text{Ar} = 4\text{-MeOC}_6\text{H}_4$ , Ph, 2-naphthyl, 2-thienyl, etc.) is explored as a route to the pyrazine ring system found in the luminescent chromophore coelenterazine (I).

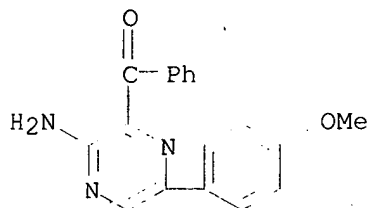
IT 180332-67-6P 180332-70-1P 180332-71-2P

RL: SPN (Synthetic preparation); PREP (Preparation)

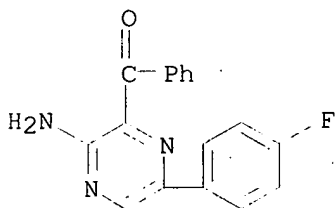
(prepn. of pyrazines related to coelenterazine via Suzuki coupling with



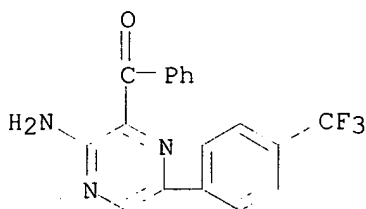
arylboronic acids)  
RN 180332-67-6 CAPLUS  
CN Methanone, [3-amino-6-(4-methoxyphenyl)pyrazinyl]phenyl- (9CI) (CA INDEX NAME)



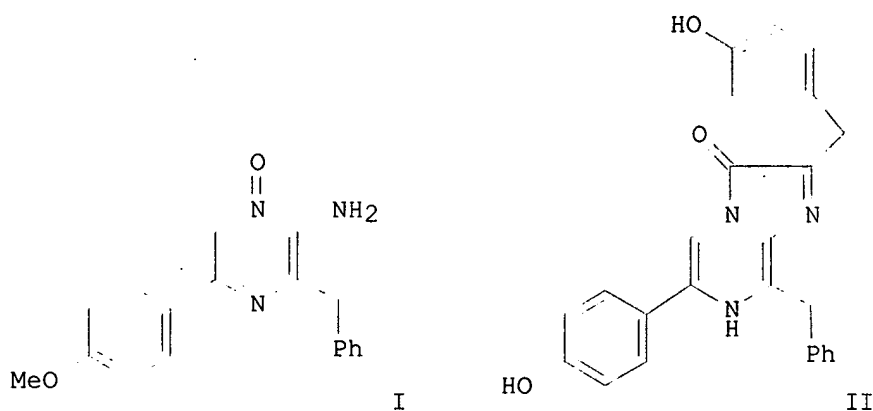
RN 180332-70-1 CAPLUS  
CN Methanone, [3-amino-6-(4-fluorophenyl)pyrazinyl]phenyl- (9CI) (CA INDEX NAME)



RN 180332-71-2 CAPLUS  
CN Methanone, [3-amino-6-[4-(trifluoromethyl)phenyl]pyrazinyl]phenyl- (9CI) (CA INDEX NAME)



~~124~~ ANSWER 45 OF 145 CAPLUS COPYRIGHT 2001 ACS  
ACCESSION NUMBER: 1996:563833 CAPLUS  
DOCUMENT NUMBER: 125:275506  
TITLE: Synthesis of coelenterazine  
AUTHOR(S): Gonzalez-Trueba, Guadalupe; Paradisi, Cristina;  
Zoratti, Mario  
CORPORATE SOURCE: Dip. Chimica Organica, CNR, Padua, 35131, Italy  
SOURCE: Anal. Biochem. (1996), 240(2), 308-310  
CODEN: ANBCA2; ISSN: 0003-2697  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
GI



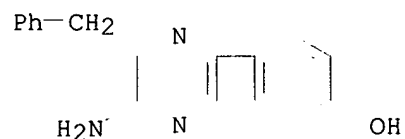
AB An alternative route for the starting material .alpha.-aminobenzenepropanenitrile HCl is described. The free amine was used in CHCl<sub>3</sub> instead of pyridine to give I which with 4-AcOC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>COCHO gave the cycloaddn. product coelenterazine (II).

IT 37156-84-6P 123437-73-0P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of coelenterazine)

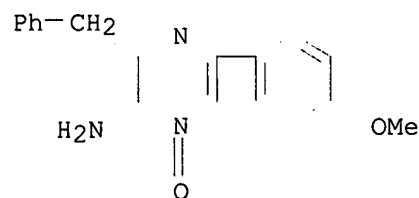
RN 37156-84-6 CAPLUS

CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



RN 123437-73-0 CAPLUS

CN Pyrazinamine, 5-(4-methoxyphenyl)-3-(phenylmethyl)-, 1-oxide (9CI) (CA INDEX NAME)



L24 ANSWER 46 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1996:154677 CAPLUS

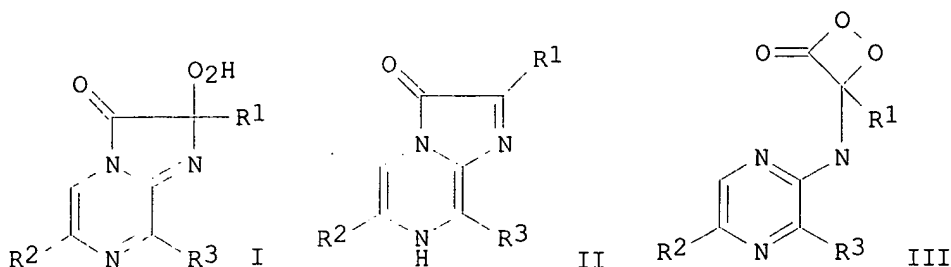
DOCUMENT NUMBER: 124:284626

TITLE: Chemiluminescent characters of hydroperoxide and dioxetanone of coelenterate luciferin analog prepared by low-temperature photooxygenation

AUTHOR(S): Usami, Ken; Isobe, Minoru

CORPORATE SOURCE: School Agricultural Sciences, Nagoya University,  
Nagoya, 464-01, Japan

SOURCE: Chem. Lett. (1996), (3), 215-16  
 CODEN: CMLTAG; ISSN: 0366-7022  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI



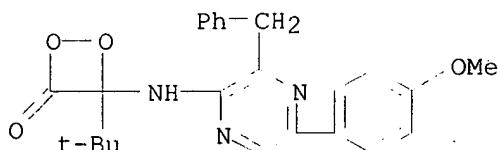
AB Chemiluminescent properties of the 2-hydroperoxide (I) and 1,2-dioxetanone (II) of coelenterate luciferin analog III, prepd. by low-temp. photooxygenation, are described. Direct luminescence by thermal decompn. of I or II was independently obsd., suggesting that the former emitted light as an anionic amide and the latter as a neutral one.

IT 172331-12-3P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (chemiluminescence of products of coelenterate luciferin analog prepd. by photooxygenation)

RN 172331-12-3 CAPLUS

CN 1,2-Dioxetan-3-one, 4-(1,1-dimethylethyl)-4-[[5-(4-methoxyphenyl)-3-(phenylmethyl)pyrazinyl]amino]- (9CI) (CA INDEX NAME)

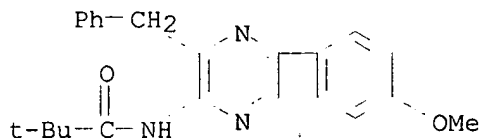


IT 156686-49-6P 175696-55-6P 175696-56-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (chemiluminescence of products of coelenterate luciferin analog prepd. by photooxygenation)

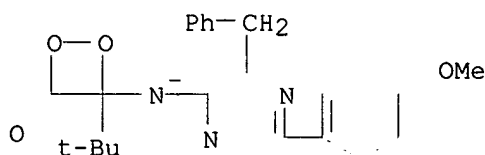
RN 156686-49-6 CAPLUS

CN Propanamide, N-[5-(4-methoxyphenyl)-3-(phenylmethyl)pyrazinyl]-2,2-dimethyl- (9CI) (CA INDEX NAME)



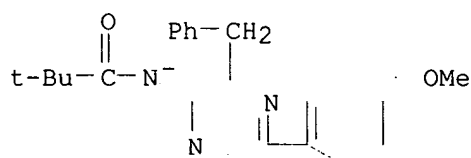
RN 175696-55-6 CAPLUS

CN 1,2-Dioxetan-3-one, 4-(1,1-dimethylethyl)-4-[[5-(4-methoxyphenyl)-3-(phenylmethyl)pyrazinyl]amino]-, ion(1-) (9CI) (CA INDEX NAME)



RN 175696-56-7 CAPLUS

CN Propanamide, N-[5-(4-methoxyphenyl)-3-(phenylmethyl)pyrazinyl]-2,2-dimethyl-, ion(1-) (9CI) (CA INDEX NAME)



L24 ANSWER 47 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1996:736845 CAPLUS

DOCUMENT NUMBER: 126:86201

TITLE: Chemiluminescence of a Cypridina luciferin analog by electrogenerated superoxide ion

AUTHOR(S): Okajima, Takeyoshi; Tokuda, Koichi; Ohsaka, Takeo

CORPORATE SOURCE: Department of Electronic Chemistry, Interdisciplinary Graduate School of Science and Engineering, Tokyo Institute of Technology, 4259 Nagatsuta, Midori-ku, Yokohama, Japan

SOURCE: Bioelectrochem. Bioenerg. (1996), 41(2), 205-208

CODEN: BEBEBP; ISSN: 0302-4598

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The authors report here preliminary results of the chemiluminescence phenomenon of MCLA which could be controlled by the electrode reaction of the O<sub>2</sub>/O<sub>2</sub><sup>-</sup> redox couple.

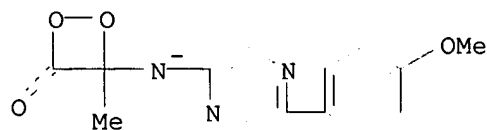
IT 185511-26-6

RL: MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)

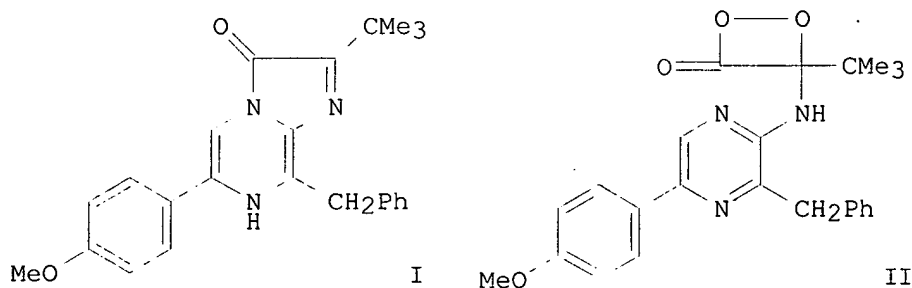
(chemiluminescence of a Cypridina luciferin analog by electrogenerated superoxide ion)

RN 185511-26-6 CAPLUS

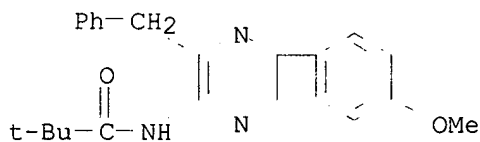
CN 1,2-Dioxetan-3-one, 4-[[5-(4-methoxyphenyl)pyrazinyl]amino]-4-methyl-, ion(1-) (9CI) (CA INDEX NAME)



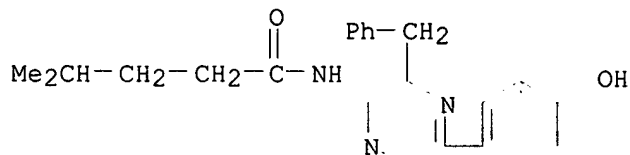
L24 ANSWER 48 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1995:957652 CAPLUS  
 DOCUMENT NUMBER: 124:86683  
 TITLE: Two luminescent intermediates of coelenterazine analog, peroxide and dioxetanone, prepared by direct photo-oxygenation at low temperature  
 AUTHOR(S): Usami, Ken; Isobe, Minoru  
 CORPORATE SOURCE: Sch. Agric. Sci., Nagoya Univ., Nagoya, 464-01, Japan  
 SOURCE: Tetrahedron Lett. (1995), 36(47), 8613-16  
 CODEN: TELEAY; ISSN: 0040-4039  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI



AB Coelenterazine analog I was photo-oxygenated at -78.degree.C to give luminous intermediates. Irradn. in mixed polar solvents, such as CF<sub>3</sub>CH<sub>2</sub>OH and MeOH, with <sup>13</sup>C-labeled analogs afforded the first evidence assignable to dioxetanone structure II.  
 IT 156686-49-6P 172331-08-7P 172331-12-3P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (evidence for a dioxetanone intermediate in the photooxidn. of coelenterazine analogs)  
 RN 156686-49-6 CAPLUS  
 CN Propanamide, N-[5-(4-methoxyphenyl)-3-(phenylmethyl)pyrazinyl]-2,2-dimethyl- (9CI) (CA INDEX NAME)

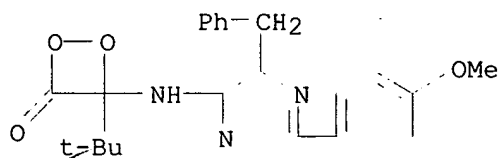


RN 172331-08-7 CAPLUS  
 CN Pentanamide, N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]-4-methyl- (9CI) (CA INDEX NAME)



RN 172331-12-3 CAPLUS

CN 1,2-Dioxetan-3-one, 4-(1,1-dimethylethyl)-4-[[5-(4-methoxyphenyl)-3-(phenylmethyl)pyrazinyl]amino]- (9CI) (CA INDEX NAME)



L24 ANSWER 49 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1995:803559 CAPLUS

DOCUMENT NUMBER: 123:222087

TITLE: A potential photoaffinity probe for labeling the active site of aequorin: a photolabile coelenterazine analog with a trifluoromethyldiazirine group

AUTHOR(S): Chen, Feng Qi; Zheng, Jing Ling; Hirano, Takashi; Niwa, Haruki; Ohmiya, Yoshihiro; Ohashi, Mamoru

CORPORATE SOURCE: Dep. Appl. Phys. Chem., Univ. Electro-Communications, Chofu, 182, Japan

SOURCE: J. Chem. Soc., Perkin Trans. 1 (1995), (17), 2129-34  
CODEN: JCPRB4; ISSN: 0300-922X

DOCUMENT TYPE: Journal

LANGUAGE: English

AB To clarify the active site of aequorin, the authors successfully synthesized a photolabile analog of coelenterazine with a trifluoromethyldiazirine group as a photoaffinity probe. Studies on the chemi- and bioluminescence of this novel analog indicate that its behavior is almost identical with that of natural coelenterazine in terms of luminescence characteristics. Therefore, the analog with the photolabile diazirine should be a useful photoaffinity label for probing the detailed structure of aequorin.

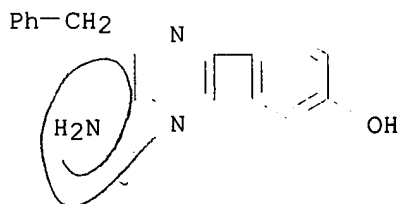
IT 37156-84-6, Coelenteramine

RL: RCT (Reactant)

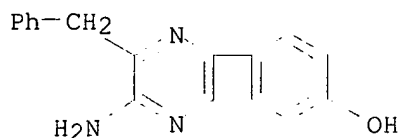
(photolabile coelenterazine analog with trifluoromethyldiazirine group as photoaffinity label for aequorin)

RN 37156-84-6 CAPLUS

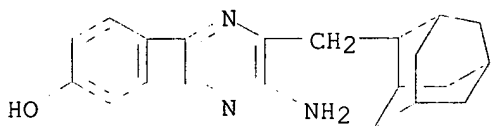
CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



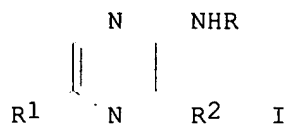
L24 ANSWER 50 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1995:672928 CAPLUS  
 DOCUMENT NUMBER: 123:83074  
 TITLE: Chemi- and bio-luminescent properties of  
 coelenterazine analogs possessing an adamantyl group  
 AUTHOR(S): Hirano, Takashi; Negishi, Ryo; Yamaguchi, Mihoko;  
 Chen, Feng Qi; Ohmiya, Yoshihiro; Tsuji, Frederick I.;  
 Ohashi, Mamoru  
 CORPORATE SOURCE: Dep. Appl. Phys. Chem., Univ. Electro-Communications,  
 Chofu, 182, Japan  
 SOURCE: J. Chem. Soc., Chem. Commun. (1995), (13), 1335-6  
 CODEN: JCCCAT; ISSN: 0022-4936  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 123:83074  
 AB The chemi- and bio-luminescent properties of coelenterazine analogs  
 possessing either 2- and 8-adamantylmethyl groups are studied and it is  
 found that the bioluminescence intensity of semi-synthetic aequorin (AQ)  
 and AQC145,152,180S contg. an 8-adamantylmethyl coelenterazine analog is  
 stronger than that of natural coelenterazine.  
 IT 37156-84-6, Coelenteramine 165330-29-0  
 RL: RCT (Reactant)  
 (chemi- and bioluminescent properties of coelenterazine adamantyl  
 analogs)  
 RN 37156-84-6 CAPLUS  
 CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



RN 165330-29-0 CAPLUS  
 CN Phenol, 4-[5-amino-6-(tricyclo[3.3.1.1<sup>3,7</sup>]dec-2-ylmethyl)pyrazinyl]- (9CI)  
 (CA INDEX NAME)



L24 ANSWER 51 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1996:64205 CAPLUS  
 DOCUMENT NUMBER: 124:232382  
 TITLE: Synthesis of 5- and 3,5-substituted 2-aminopyrazines  
 by Pd mediated Stille coupling  
 AUTHOR(S): Nakamura, Hideshi; Takeuchi, Daisuke; Murai, Akio  
 CORPORATE SOURCE: Grad. Sch. Sci., Hokkaido Univ., Sapporo, 060, Japan  
 SOURCE: Synlett (1995), (12), 1227-8  
 CODEN: SYNLES; ISSN: 0936-5214  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 124:232382  
 GI



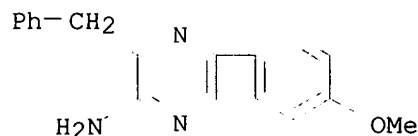
AB 5-Substituted and 3,5-disubstituted 2-aminopyrazines I (R = H, Ac, CHO, R1 = 4-MeOC6H4, Ph, 4-O2NC6H4, 2-furyl, 2-thienyl, allyl, Bu, R2 = H, 4-MeOC6H4, 2-thienyl, CH2Ph) were prepd. in 35-99% yields by Pd mediated Stille coupling of 3-bromo and 3,5-dibromo derivs. of 2-aminopyrazine with stannyl compds. R1SnBu3 in DMF.

IT 40040-81-1P 119738-50-0P 120821-85-4P  
144465-03-2P 174680-56-9P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(palladium-catalyzed Stille coupling of aminopyrazines to tributylstannanes)

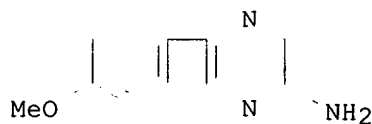
RN 40040-81-1 CAPLUS

CN Pyrazinamine, 5-(4-methoxyphenyl)-3-(phenylmethyl)- (9CI) (CA INDEX NAME)



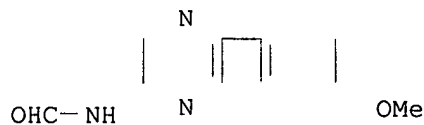
RN 119738-50-0 CAPLUS

CN Pyrazinamine, 5-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



RN 120821-85-4 CAPLUS

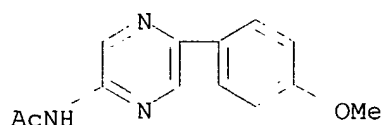
CN Formamide, N-[5-(4-methoxyphenyl)pyrazinyl]- (9CI) (CA INDEX NAME)



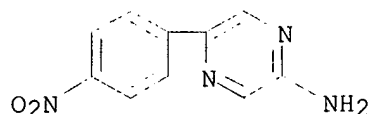
RN 144465-03-2 CAPLUS

CN Acetamide, N-[5-(4-methoxyphenyl)pyrazinyl]- (9CI) (CA INDEX NAME)



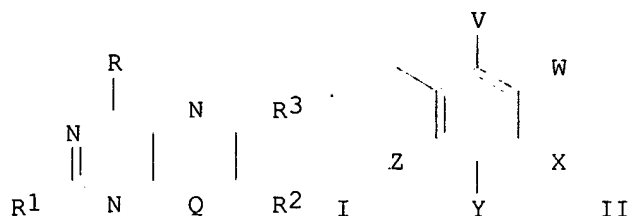


RN 174680-56-9 CAPLUS  
 CN Pyrazinamine, 5-(4-nitrophenyl)- (9CI) (CA INDEX NAME)



L24 ANSWER 52 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1995:324866 CAPLUS  
 DOCUMENT NUMBER: 122:258655  
 TITLE: Preparation of insecticidal pteridines and  
 8-deazapteridines.  
 INVENTOR(S): Henrie, Robert Neil, II; Peake, Clinton Joseph;  
 Cullen, Thomas Gerard; Lew, Albert Chieh; Silverman,  
 Ian Robert  
 PATENT ASSIGNEE(S): FMC Corp., USA  
 SOURCE: PCT Int. Appl., 64 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9427439	A1	19941208	WO 1994-US4474	19940425
W: AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, ES, FI, GB, GE, HU, JP, KG, KP, KR, KZ, LK, LU, LV, MD, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SK, TJ, TT, UA, UZ, VN				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
US 5521190	A	19960528	US 1993-67897	19930527
AU 9467726	A1	19941220	AU 1994-67726	19940425
US 5532367	A	19960702	US 1995-416017	19950331
US 5639753	A	19970617	US 1995-612657	19951128
PRIORITY APPLN. INFO.:			US 1993-67897	19930527
			WO 1994-US4474	19940425
OTHER SOURCE(S):		MARPAT 122:258655		
GI				



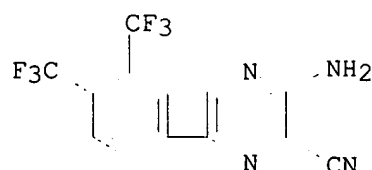
AB Pteridine and 8-deazapteridine compds. and compns. were prepd. and used for controlling insects in agricultural crops. These pteridines may be represented by structure [I, R and R1 = NH<sub>2</sub>, lower alkylamino, di(lower alkyl)amino (e.g., NMe<sub>2</sub>), or di(lower alkyl)aminomethyleneamine (e.g., N=CNHMe<sub>2</sub>); R2 = H, NH<sub>2</sub>, lower alkyl (e.g., -CH<sub>3</sub>, -CH(CH<sub>3</sub>)<sub>2</sub>), di(lower alkyl)aminomethyleneamino, OH, lower alkoxy, Ph or substituted Ph, haloalkylphenylalkyl (e.g., 3-trifluoromethylphenylmethyl); Q = N or CH; R3 = (n)m-R4, m = 0 or 1; when m = 1, n is a bridging atom or moiety selected from O, S, SO, SO<sub>2</sub>, lower alkylene (e.g., CH<sub>2</sub> or CH<sub>2</sub>CH<sub>2</sub>), lower alkenylene (e.g., CH=CH), lower alkynylene (e.g., C.tplbond.C), lower haloalkenylene (e.g., C(Cl)=CH), CO, aminomethyl (e.g., CH<sub>2</sub>NH), or (substituted amino)methyl (e.g., CH<sub>2</sub>NMe); and R4 = H, lower alkyl (e.g., Me, i-Pr), thien-2-yl, pyridin-3-yl, or II; V, W, X, Y = H, halo, haloalkyl, aryl, Ph, PhO; Z = H or halo]. A typical dust formulation against tobacco budworm contained 1 part 2,4-diamino-6-[3,5-di(trifluoromethyl)phenyl]-7-methylpteridine and 99 parts talc.

IT 160602-30-2P 160602-32-4P 160602-33-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and reactions for prepn. of insecticidal pteridines)

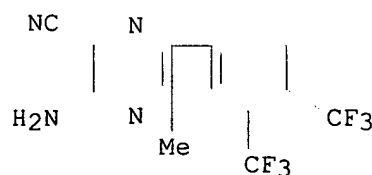
RN 160602-30-2 CAPLUS

CN Pyrazinecarbonitrile, 3-amino-6-[3,4-bis(trifluoromethyl)phenyl]- (9CI)  
(CA INDEX NAME)



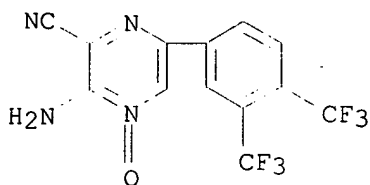
RN 160602-32-4 CAPLUS

CN Pyrazinecarbonitrile, 3-amino-6-[3,4-bis(trifluoromethyl)phenyl]-5-methyl- (9CI) (CA INDEX NAME)

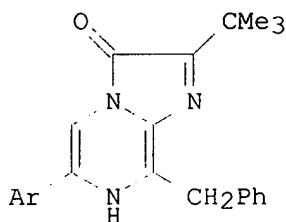


RN 160602-33-5 CAPLUS

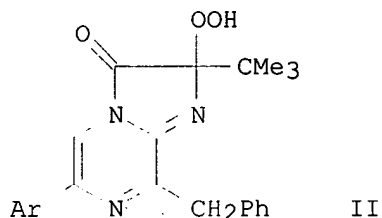
CN Pyrazinecarbonitrile, 3-amino-6-[3,4-bis(trifluoromethyl)phenyl]-, 4-oxide (9CI) (CA INDEX NAME)



L24 ANSWER 53 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1995:204046 CAPLUS  
 DOCUMENT NUMBER: 122:105810  
 TITLE: Synthesis of hydroperoxide via photooxygenation for a model aequorin bioluminescence  
 AUTHOR(S): Teranishi, Katsunori; Ueda, Kazuo; Nakao, Hidekazu; Hisamatsu, Makoto; Yamada, Tetsuya  
 CORPORATE SOURCE: Sch. Bioresources, Mie Univ., Tsu, 514, Japan  
 SOURCE: Tetrahedron Lett. (1994), 35(44), 8181-4  
 CODEN: TELEAY; ISSN: 0040-4039  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI

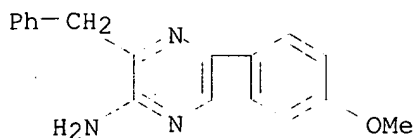


I



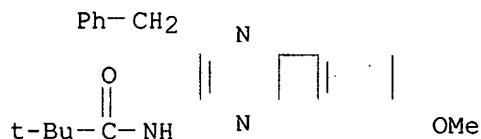
II

AB An analog of the unstable hydroperoxide of coelenterazine (Oplophorus luciferin) was prepd. by photooxygenation of coelenterazine analog I (Ar = 4-MeOC6H4) with polymer-bound Rose Bengal. The hydroperoxide II may be a key intermediate model in the bioluminescence of aequorin and the chemiluminescence of coelenterazine.  
 IT 40040-81-1P 156686-49-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of a coelenterazine hydroperoxide analog via photooxygenation as model for aequorin bioluminescence)  
 RN 40040-81-1 CAPLUS  
 CN Pyrazinamine, 5-(4-methoxyphenyl)-3-(phenylmethyl)- (9CI) (CA INDEX NAME)



RN 156686-49-6 CAPLUS  
 CN Propanamide, N-[5-(4-methoxyphenyl)-3-(phenylmethyl)pyrazinyl]-2,2-

dimethyl- (9CI) (CA INDEX NAME)



L24 ANSWER 54 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1994:508349 CAPLUS

DOCUMENT NUMBER: 121:108349

TITLE: Synthesis of silyl peroxide of coelenterazine (Oplophorus luciferin) analog for precursor of luminescence

AUTHOR(S): Teranishi, Katsunori; Isobe, Minoru; Yamada, Tetsuya

CORPORATE SOURCE: Sch. Bioresour., Mie Univ., Tsu, 514, Japan

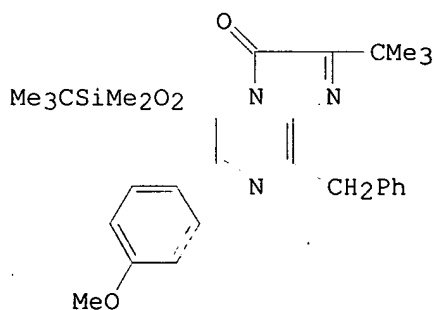
SOURCE: Tetrahedron Lett. (1994), 35(16), 2565-8

CODEN: TELEAY; ISSN: 0040-4039

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



I

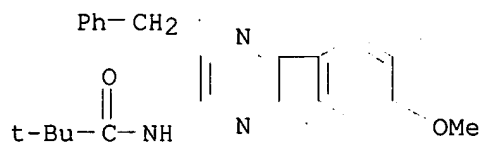
AB Unstable tert-butyldimethylsilyl peroxide I of coelenterazine analog has been synthesized by radical reaction of tert-butyldimethylsilyl hydroperoxide. This compd. may be a key intermediate model in the bioluminescence and chemiluminescence of coelenterazine.

IT 156686-49-6P

RL: SPN (Synthetic preparation); PREP (Preparation) (prepn. of)

RN 156686-49-6 CAPLUS

CN Propanamide, N-[5-(4-methoxyphenyl)-3-(phenylmethyl)pyrazinyl]-2,2-dimethyl- (9CI) (CA INDEX NAME)



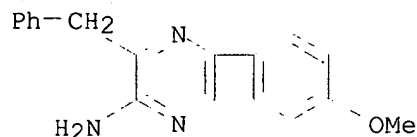
IT 40040-81-1

RL: RCT (Reactant)

(reaction of, in prepn. of coelenterazine silyl peroxide)

RN 40040-81-1 CAPLUS

CN Pyrazinamine, 5-(4-methoxyphenyl)-3-(phenylmethyl)- (9CI) (CA INDEX NAME)



L24 ANSWER 55 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1995:188778 CAPLUS

DOCUMENT NUMBER: 122:81283

TITLE: Synthesis and preliminary chemi- and bio-luminescence studies of a novel photolabile coelenterazine analog with a trifluoromethyl diazirine group

AUTHOR(S): Chen, Feng-Qi; Hirano, Takashi; Hashizume, Yoshinobu; Ohmiya, Yoshihiro; Ohashi, Mamoru

CORPORATE SOURCE: Dep. Appl. Phys. Chem., Univ. Electro-Communications, Tokyo, 182, Japan

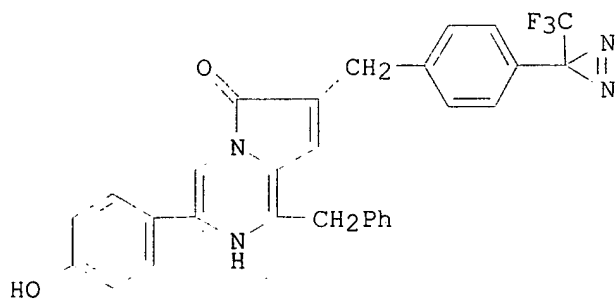
SOURCE: J. Chem. Soc., Chem. Commun. (1994), (20), 2405-6

CODEN: JCCCAT; ISSN: 0022-4936

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



I

AB A novel photolabile analog of coelenterazine with a trifluoromethyl diazirine group I is successfully synthesized for photoaffinity labeling of the active site of aequorin; preliminary studies on its chemi- and bio-luminescence demonstrate that the photolabile analog shows the same luminescence properties and kinetics as those of natural coelenterazine and thus, it is deduced that both compds. occupy the same active site of aequorin.

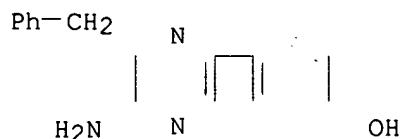
IT 37156-84-6

RL: RCT (Reactant)

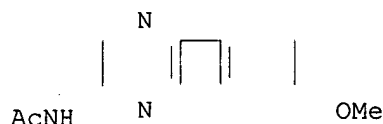
(synthesis and preliminary chemi- and bio-luminescence studies of a novel photolabile coelenterazine analog with a trifluoromethyl diazirine group)

RN 37156-84-6 CAPLUS

CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



L24 ANSWER 56 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1995:126975 CAPLUS  
 DOCUMENT NUMBER: 122:4783  
 TITLE: Chemiluminescent assay of .beta.-D-galactosidase using Cypridina luciferin analog: 3-(.beta.-D-galactopyranosyloxy)-6-(4-methoxyphenyl)-2-methylimidazo[1,2-a]pyrazine  
 AUTHOR(S): Mitani, Motohiro; Sakaki, Syujiro; Koinuma, Yasumi; Toya, Yoshiaki; Kosugi, Masanori  
 CORPORATE SOURCE: Tsukuba Res. Lab., NOF Corp., Ibaraki, 300-26, Japan  
 SOURCE: Anal. Sci. (1994), 10(5), 813-14  
 CODEN: ANSCEN; ISSN: 0910-6340  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB We prepd. a new Cypridina luciferin analog, 3-(.beta.-D-galactopyranosyloxy)-6-(4-methoxyphenyl)-2-methylimidazo[1,2-a]-pyrazine (.beta.-Gal-MCLA) which can enzymically remove galactose to produce 2-methyl-6-(4-methoxyphenyl)-3,7-dihydroimidazo[1,2-a]pyrazine-3(7H)-one(MCLA), its autoxidn. follows, providing the chemiluminescence. .beta.-Gal-MCLA was thus a useful chemiluminescent substrate for .beta.-D-galactosidase detn.  
 IT 144465-03-2  
 RL: ARU (Analytical role, unclassified); ANST (Analytical study) (chemiluminescent assay of .beta.-D-galactosidase using Cypridina luciferin analog: 3-(.beta.-D-galactopyranosyloxy)-6-(4-methoxyphenyl)-2-methylimidazo[1,2-a]pyrazine)  
 RN 144465-03-2 CAPLUS  
 CN Acetamide, N-[5-(4-methoxyphenyl)pyrazinyl]- (9CI) (CA INDEX NAME)



L24 ANSWER 57 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1994:238580 CAPLUS  
 DOCUMENT NUMBER: 120:238580  
 TITLE: Revision of the structure of the light-emitter in aequorin bioluminescence  
 AUTHOR(S): Hirano, Takashi; Mizoguchi, Iwao; Yamaguchi, Mihoko; Chen, Feng; Ohashi, Mamoru; Ohmiya, Yoshihiro; Tsuji, Frederick I.  
 CORPORATE SOURCE: Dep. Appl. Phys. Chem., Univ. Electro-Commun., Chofu, 182, Japan  
 SOURCE: J. Chem. Soc., Chem. Commun. (1994), (2), 165-7  
 CODEN: JCCCAT; ISSN: 0022-4936

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The structure of the excited light-emitter in aequorin bioluminescence was assigned not to an amide anion of coelenteramide but to a phenolate anion on the basis of the luminescence of regenerated aequorin and of the fluorescence of the blue fluorescent protein regenerated with coelenteramide analogs including N-Me derivs.

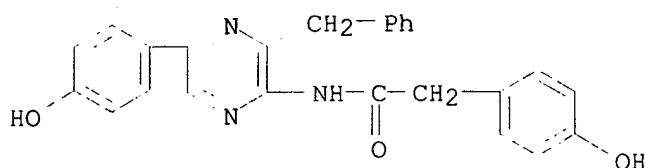
IT 50611-86-4, Coelenteramide

RL: PROC (Process)

(in aequorin light emission, structural characterization of)

RN 50611-86-4 CAPLUS

CN Benzeneacetamide, 4-hydroxy-N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



L24 ANSWER 58 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1994:269942 CAPLUS

DOCUMENT NUMBER: 120:269942

TITLE: Preparation of Cypridinida's luciferin derivatives as luminescent probes for chemiluminescence immunoassay

INVENTOR(S): Sawada, Hideo; Totani, Yoshiaki; Mitani, Motohiro;

Ichikawa, Hideji; Matsumoto, Takeo

PATENT ASSIGNEE(S): Nippon Oils &amp; Fats Co Ltd, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

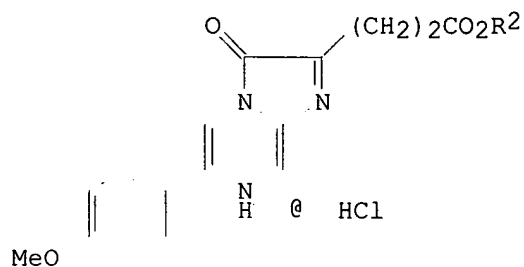
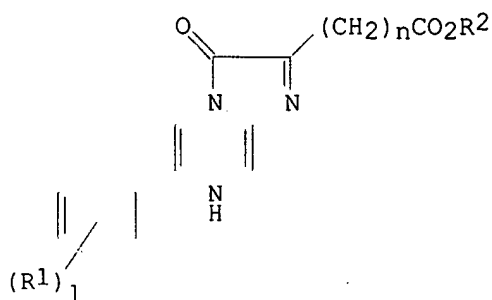
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05286976	A2	19931102	JP 1992-13167	19920128
OTHER SOURCE(S): MARPAT 120:269942				
GI				



AB The title compds. (I; R1 = H, C1-4 alkyl, alkoxy; R2 = H, C1-10 alkyl, N-succinimidyl; n = 1-10) are prepd. I react with biol. important substances such as antigens, antibodies, hormones, drugs, drug metabolites, toxins, and alkaloids to form luminescent compds. and thus are used as reagents for luminescent anal. and chemiluminescence immunoassay (no data). Thus, iso-Pr levulinate was oxidized by SeO2 in iso-PrOH at 80.degree. to give 50% glyoxal deriv. HCOCOCH2CH2CO2CHMe2 which was cyclocondensed with 2-amino-6-(p-methoxyphenyl)pyrazine in the presence of concd. HCl in iso-PrOH at 70.degree. to give a phenylimidazopyrazine deriv. (II; R2 = iso-Pr). The latter compd. was hydrolyzed in 3N HCl at 60.degree. to give 60% II (R2 = H). Addnl. 9 I were prepd.

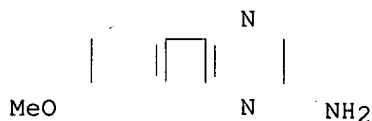
IT 119738-50-0 154616-04-3

RL: RCT (Reactant)

(cyclocondensation of, with glyoxal deriv.)

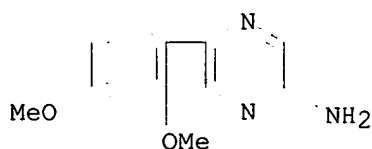
RN 119738-50-0 CAPLUS

CN Pyrazinamine, 5-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



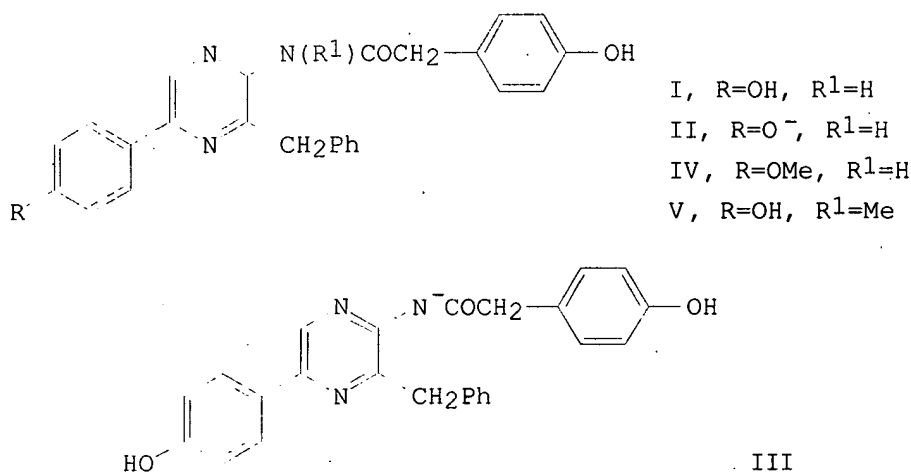
RN 154616-04-3 CAPLUS

CN Pyrazinamine, 5-(2,4-dimethoxyphenyl)- (9CI) (CA INDEX NAME)





L24 ANSWER 59 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1994:600005 CAPLUS  
 DOCUMENT NUMBER: 121:200005  
 TITLE: Structure elucidation of the light emitter in aequorin bioluminescence  
 AUTHOR(S): Hirano, T.; Kurono, S.; Yamaguchi, M.; Mizoguchi, I.; Chen, F. Q.; Ohashi, M.; Ohmiya, Y.; Tsuji, F. I.  
 CORPORATE SOURCE: Dep. Appl. Phys. Chem., Univ. Electro-Commun., Japan  
 SOURCE: Tennen Yuki Kagobutsu Toronkai Koen Yoshishu (1993), 35th, 551-8  
 CODEN: TYKYDS  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Chinese  
 GI



AB Aequorin (AQ) is a calcium-binding protein from the jellyfish, *Aequoria victoria*, which emits light (460 nm) by an intramol. reaction on binding calcium ions. During light emission, coelenterazine is oxidized to coelenteramide (I) and a blue fluorescent protein (BFP) is formed consisting of coelenteramide noncovalently bound to apoAQ. While the singlet excited state of coelenteramide is known to be the emitter in the reaction, there has been uncertainty regarding the structure of the emitter. The authors here report, based on studies of coelenterazine derivs. with recombinant apoAQ, that the emitting species is a phenolate mono anion of coelenteramide. AQ was prepd. by the incubating recombinant apoAQ with coelenterazine, dissolved oxygen and dithiothreitol, and gave a bioluminescence emission spectrum identical to the fluorescence spectrum of the spent reaction mixt. contg. BFP. Incubation of recombinant apoAQ with coelenteramide also produced BFP. Mol. wt. of recombinant apoAQ and BFP were confirmed by electrospray mass spectrometry. Coelenteramide has three acidic protons located at the two phenolic hydroxyls and amide groups, and structures II and III have been considered as the possible emitters at 460 nm. To decide between the two structures, analogs IV and V were synthesized. Although the fluorescence spectrum of IV in BFP could not be obsd., V incubated with recombinant apoAQ yielded a BFP with a fluorescence spectrum possessing a peak at 480 nm. This emission max. is

similar to bioluminescence max. of AQ suggesting that the excited state emitter in AQ could not be the amide anion but be the phenolate anion 1 a. This finding indicates that excited state formation in free soln. differs from that taking place within the active site of the AQ mol.

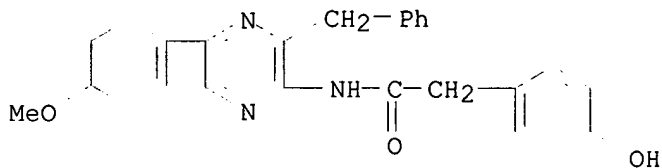
IT 157829-70-4P 157829-71-5P

RL: PREP (Preparation)

(prepn. of, structure elucidation of light emitter in aequorin bioluminescence in relation to)

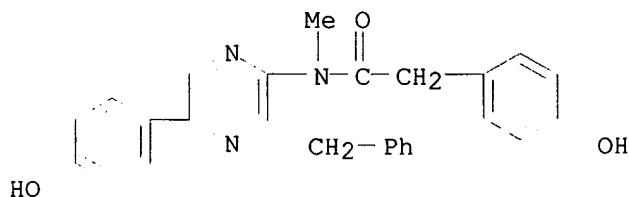
RN 157829-70-4 CAPLUS

CN Benzeneacetamide, 4-hydroxy-N-[5-(4-methoxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



RN 157829-71-5 CAPLUS

CN Benzeneacetamide, 4-hydroxy-N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]-N-methyl- (9CI) (CA INDEX NAME)



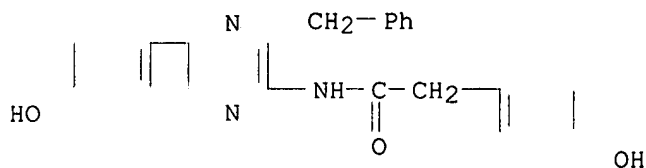
IT 50611-86-4, Coelenteramide 157829-72-6

RL: ANST (Analytical study)

(structure elucidation of light emitter in aequorin bioluminescence in relation to)

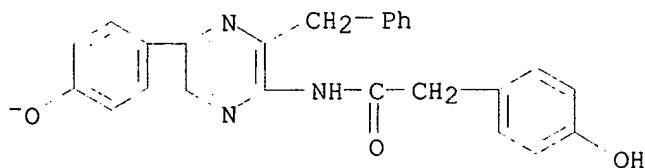
RN 50611-86-4 CAPLUS

CN Benzeneacetamide, 4-hydroxy-N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



RN 157829-72-6 CAPLUS

CN Benzeneacetamide, 4-hydroxy-N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]-, ion(1-) (9CI) (CA INDEX NAME)



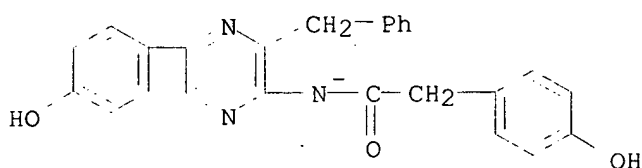
IT 124469-75-6

RL: PROC (Process)

(structure elucidation of, as light emitter in aequorin bioluminescence)

RN 124469-75-6 CAPLUS

CN Benzeneacetamide, 4-hydroxy-N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]-, ion(1-) (9CI) (CA INDEX NAME)



L24 ANSWER 60 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1993:408773 CAPLUS

DOCUMENT NUMBER: 119:8773

TITLE: 3-Benzyl-5-(4-hydroxyphenyl)-2-[4-(1-aziridin-2,2,2-trifluoroethyl)phenylacetamido]pyrazine, a photoreactive analog of coelenteramide. Synthesis and photolysis

AUTHOR(S): Chen, Feng Qi; Hirano, Takashi; Ohashi, Mamoru;

Nakayama, Hitoshi; Oda, Kazuaki; Machida, Minoru

CORPORATE SOURCE: Dep. Appl. Phys. Chem., Univ. Electro-Commun., Chofu, 182, Japan

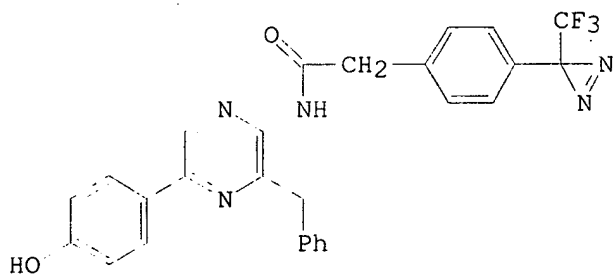
SOURCE: Chem. Lett. (1993), 2 287-90

CODEN: CMLTAG; ISSN: 0366-7022

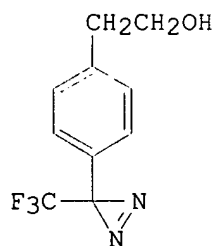
DOCUMENT TYPE: Journal

LANGUAGE: English

GI



I



II

AB A photoreactive analog of coelenteramide (light emitting species in

aequorin bioluminescence), I, has been synthesized for photoaffinity labeling studies of aequorin. Thus, oxidn. of [(hydroxyethyl)phenyl]diazirine II gave the acid which condensed with coelenteramine to give I. Photolysis of I in methanol gave a formal OH insertion product in 62% yield without damage of the main skeleton of coelenteramide, indicating a potential use for mapping the coelenterazine binding site in aequorin.

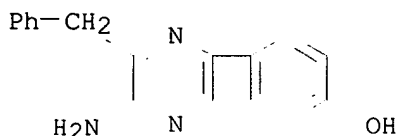
IT 37156-84-6

RL: RCT (Reactant)

(amidation by, of (azitrifluoroethyl)phenylacetic acid)

RN 37156-84-6 CAPLUS

CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)

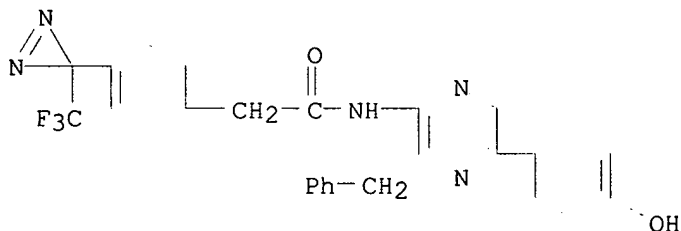


IT 148058-41-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and photolysis of, in methanol)

RN 148058-41-7 CAPLUS

CN Benzeneacetamide, N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]-4-[3-(trifluoromethyl)-3H-diazirin-3-yl]- (9CI) (CA INDEX NAME)

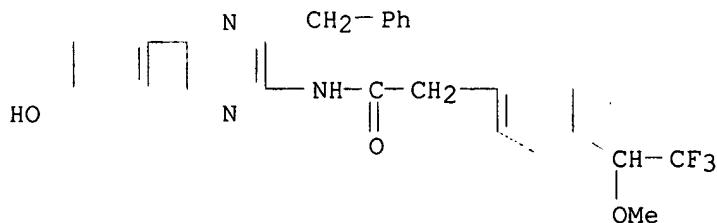


IT 148058-42-8P

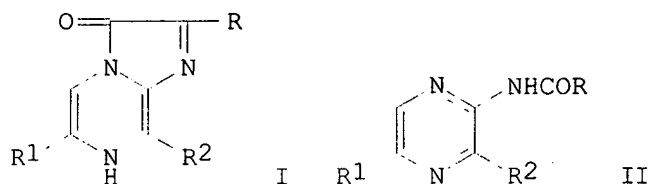
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

RN 148058-42-8 CAPLUS

CN Benzeneacetamide, N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]-4-(2,2,2-trifluoro-1-methoxyethyl)- (9CI) (CA INDEX NAME)



DOCUMENT NUMBER: 118:22070  
 TITLE: Chemiluminescence of coelenterazine analogs - structures of emitting species  
 AUTHOR(S): Hirano, Takashi; Gomi, Yasushiro; Takahashi, Tomoyuki; Kitahara, Kennichi; Qi, Chen Feng; Mizoguchi, Iwao; Kyushin, Soichiro; Ohashi, Mamoru  
 CORPORATE SOURCE: Dep. Appl. Phys. Chem., Univ. Electro-Commun., Chofu, 182, Japan  
 SOURCE: Tetrahedron Lett. (1992), 33(39), 5771-4  
 CODEN: TELEAY; ISSN: 0040-4039  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI



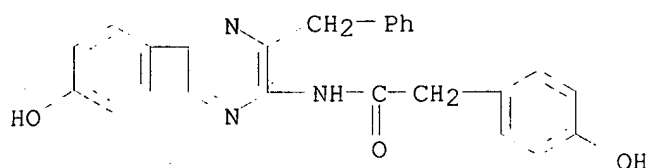
AB Coelenterazine (I, R = CH<sub>2</sub>C<sub>6</sub>H<sub>4</sub>OH-4, R<sub>1</sub> = C<sub>6</sub>H<sub>4</sub>OH-4, R<sub>2</sub> = CH<sub>2</sub>Ph) and its analogs I (R = Me, CH<sub>2</sub>Ph; R<sub>1</sub> = H, Ph, C<sub>6</sub>H<sub>4</sub>OH-4, C<sub>6</sub>H<sub>4</sub>OMe-4, R<sub>2</sub> = H; R<sub>1</sub> = C<sub>6</sub>H<sub>4</sub>OH-4, R<sub>2</sub> = CH<sub>2</sub>Ph) chemiluminesce in diethylene glycol di-Me ether contg. acetate buffer and in DMSO-aq. NaOH. The emitting species is either the neutral amide II or its anion, depending on the fluorescence quantum yield of II, the lifetime of its anion, and the proton concn. of the medium.

IT 50611-86-4 50909-85-8 144763-58-6  
 144763-59-7 145022-25-9 145022-26-0  
 145022-27-1 145022-28-2 145022-29-3  
 145022-30-6 145022-31-7

RL: PRP (Properties)  
 (fluorescence of, coelenterazine chemiluminescence in relation to)

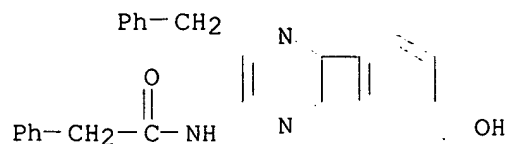
RN 50611-86-4 CAPLUS

CN Benzeneacetamide, 4-hydroxy-N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



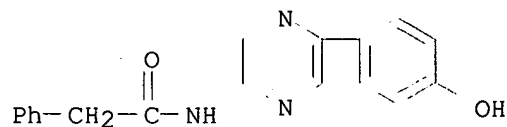
RN 50909-85-8 CAPLUS

CN Benzeneacetamide, N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI)  
 (CA INDEX NAME)



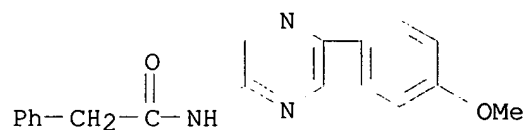
RN 144763-58-6 CAPLUS

CN Benzeneacetamide, N-[5-(4-hydroxyphenyl)pyrazinyl]- (9CI) (CA INDEX NAME)



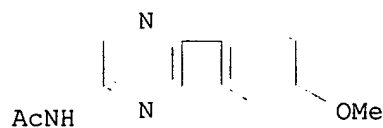
RN 144763-59-7 CAPLUS

CN Benzeneacetamide, N-[5-(4-methoxyphenyl)pyrazinyl]- (9CI) (CA INDEX NAME)



RN 145022-25-9 CAPLUS

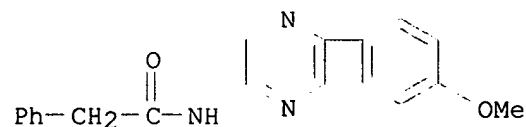
CN Acetamide, N-[5-(4-methoxyphenyl)pyrazinyl]-, sodium salt (9CI) (CA INDEX NAME)



● Na

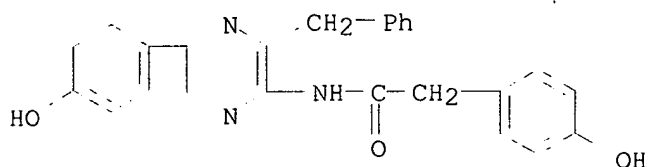
RN 145022-26-0 CAPLUS

CN Benzeneacetamide, N-[5-(4-methoxyphenyl)pyrazinyl]-, sodium salt (9CI) (CA INDEX NAME)



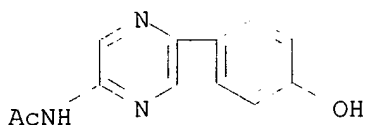
Na

RN 145022-27-1 CAPLUS  
 CN Benzeneacetamide, 4-hydroxy-N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]-, trisodium salt (9CI) (CA INDEX NAME)



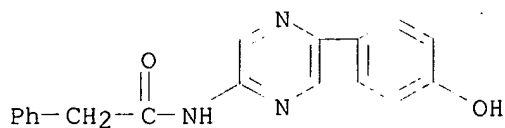
●3 Na

RN 145022-28-2 CAPLUS  
 CN Acetamide, N-[5-(4-hydroxyphenyl)pyrazinyl]-, disodium salt (9CI) (CA INDEX NAME)



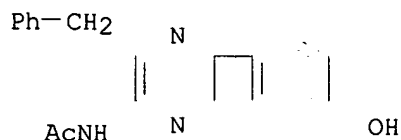
●2 Na

RN 145022-29-3 CAPLUS  
 CN Benzeneacetamide, N-[5-(4-hydroxyphenyl)pyrazinyl]-, disodium salt (9CI) (CA INDEX NAME)



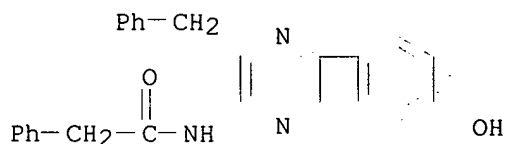
●2 Na

RN 145022-30-6 CAPLUS  
 CN Acetamide, N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]-, disodium salt (9CI) (CA INDEX NAME)



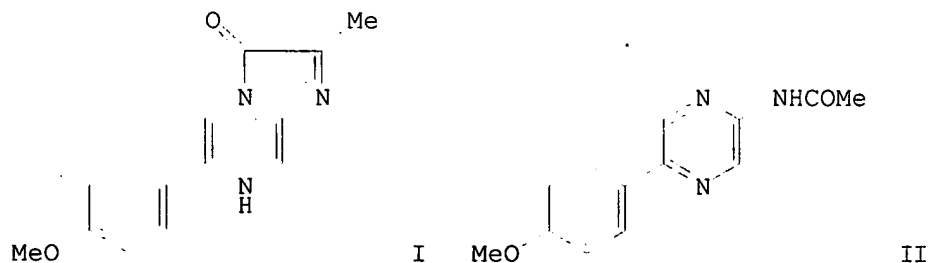
●2 Na

RN 145022-31-7 CAPLUS  
 CN Benzeneacetamide, N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]-,  
 disodium salt (9CI) (CA INDEX NAME)



●2 Na

L24 ANSWER 62 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1992:651609 CAPLUS  
 DOCUMENT NUMBER: 117:251609  
 TITLE: Synthesis and chemiluminescence properties of  
 6-(4-methoxyphenyl)-2-methylimidazo[1,2-a]pyrazin-  
 3(7H)-one and 2-methyl-6-(2-naphthyl)imidazo[1,2-  
 a]pyrazin-3(7H)-one  
 AUTHOR(S): Toya, Yoshiaki; Kayano, Toshimasa; Sato, Kyoko; Goto,  
 Toshio  
 CORPORATE SOURCE: Lab. Org. Chem., Aichi Univ. Educ., Kariya, 448, Japan  
 SOURCE: Bull. Chem. Soc. Jpn. (1992), 65(9), 2475-9  
 CODEN: BCSJA8; ISSN: 0009-2673  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 117:251609  
 GI



AB New Cypridina luciferin analogs, 6-(4-methoxyphenyl)-2-methylimidazo[1,2-  
 a]pyrazin-3(7H)-one (MCLA) (I) and 2-methyl-6-(2-naphthyl)imidazo[1,2-



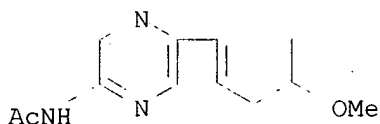
a]pyrazin-3(7H)-one (NCLA), were prepd. together with their oxyluciferin analogs, 2-acetamido-5-(4-methoxyphenyl)pyrazine (MCLA) (II) and 2-acetamido-5-(2-naphthyl)-pyrazine (NCOLA). Various chemiluminescence properties of these compds. were compared with those of known luciferin analogs, 2-methyl-6-phenylimidazo[1,2-a]pyrazin-3(7H)-one (CLA) and 6-(3-indolyl)-2-methylimidazo[1,2-a]pyrazin-3(7H)-one (ICLA). The light yields obtained from ICLA, MCLA, and NCLA were much higher than CLA in diethylene glycol di-Me ether (diglyme), in which triplet oxygen was the oxidant. In aq. soln., employing superoxide ion as the oxidant, NCLA emitted light weaker than CLA and MCLA. ICLA gave almost no light on account of no fluorescence intensity of the emitter (oxyluciferin analog ICOLA) in aq. soln. For applications to the detection of active oxygen species produced during enzymic reactions, MCLA is superior to conventionally used CLA because of its higher chemiluminescence quantum yield and its emission max. in visible region.

IT 144465-03-2P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and chemiluminescence properties of (oxyluciferin analog))

RN 144465-03-2 CAPLUS

CN Acetamide, N-[5-(4-methoxyphenyl)pyrazinyl]- (9CI) (CA INDEX NAME)

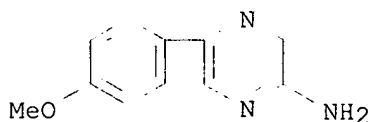


IT 119738-50-0

RL: RCT (Reactant)  
(reaction of, with Me glyoxal or acetylation of)

RN 119738-50-0 CAPLUS

CN Pyrazinamine, 5-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



L24 ANSWER 63 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1992:550790 CAPLUS

DOCUMENT NUMBER: 117:150790

TITLE: Chemi- and bio-luminescence of coelenterazine analogs  
with phenyl homologs at the C-2 position

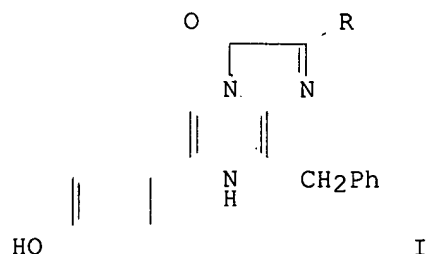
AUTHOR(S): Qi, Chen Feng; Gomi, Yasushiro; Hirano, Takashi;  
Ohashi, Mamoru; Ohmiya, Yoshihiro; Tsuji, Frederick I.  
CORPORATE SOURCE: Dep. Appl. Phys. Chem., Univ. Electro-Commun., Chofu,  
182, Japan

SOURCE: J. Chem. Soc., Perkin Trans. 1 (1992), (13), 1607-11  
CODEN: JCPRB4; ISSN: 0300-922X

DOCUMENT TYPE: Journal

LANGUAGE: English

GI.



AB A series of Ph homologs I [R = Me, Ph, PhCH<sub>2</sub>, 4-HOC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>, Ph(CH<sub>2</sub>)<sub>2</sub>, Ph(CH<sub>2</sub>)<sub>3</sub>] of coelenterazine substituted at the C-2 position were synthesized and their bio- and chemi-luminescence properties were investigated including the measurement of chemiluminescence spectra in various media. The light emitting species of each analog was found to be a neutral form of a coelenteramide deriv. in diethylene glycol di-Me ether (DGM) contg. a trace amt. of acetate buffer (pH 5.60), while a monoanion was found only in DMSO and a dianion was obsd. in DMSO contg. a trace amt. of aq. sodium hydroxide. Based on pseudo first-order reaction kinetics, chemiluminescence rate consts. were obtained in DGM contg. a trace amt. of acetate buffer. Each of the synthetic coelenterazine analogs was incorporated into recombinant apoaequorin to obtain a series of semisynthetic aequorins. Measurements of bioluminescence activities of the aequorins revealed that a benzyl group in the C-2 position was essential for efficient luminescence activity. A two-step incubation procedure was used to det. why some analogs gave less luminescence activity than the benzyl analog and natural coelenterazine.

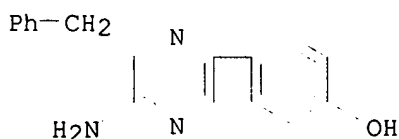
IT 37156-84-6

RL: RCT (Reactant)

(cyclization of, with oxoalkanals, imidazopyrazinones from)

RN 37156-84-6 CAPLUS

CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



L24 ANSWER 64 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1992:235319 CAPLUS

DOCUMENT NUMBER: 116:235319

TITLE: Revision of structure of yellow compound, a reduction product from aequorin, photoprotein in jellyfish, Aequorea aequorea

AUTHOR(S): Teranishi, Katsunori; Isobe, Minoru; Yamada, Tetsuya; Goto, Toshio

CORPORATE SOURCE: Sch. Agric., Nagoya Univ., Nagoya, 464-01, Japan

SOURCE: Tetrahedron Lett. (1992), 33(10), 1303-6

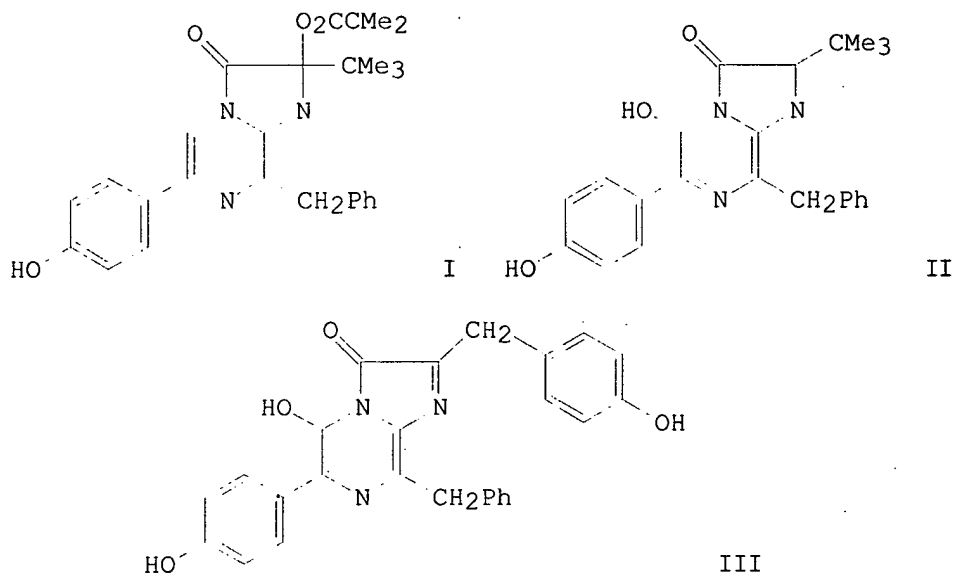
CODEN: TELEAY; ISSN: 0040-4039

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 116:235319

GI



AB The structure of yellow compd. from aequorin was revised by means of synthesis of stable analogs I and II having tert-Bu group at the 2-position of the imidazopyrazinone chromophore. Comparing their absorption spectra showed that the yellow compd. should have the 5-oxo structure instead of having hydroxy group at 2 position as reported previously. Abs, the structure for the above yellow compd. was revised to III.

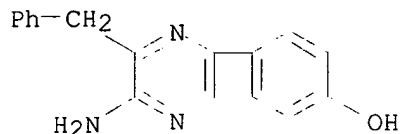
IT 37156-84-6

RL: RCT (Reactant)

(reaction of, with oxo ester)

RN 37156-84-6 CAPLUS

CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



L24 ANSWER 65 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1992:571380 CAPLUS

DOCUMENT NUMBER: 117:171380

TITLE: Metalation of diazines. VI. Metalation of pivaloylaminopyrazine and N-tert-butylpyrazinamide. Unusual regioselectivity in the metalation reaction.

AUTHOR(S): Turck, A.; Ple, N.; Trohay, D.; Ndzi, B.; Queguiner, G.

CORPORATE SOURCE: Lab. Chim. Org. Fine Heterocyclique, INSA, Mt. St. Aignan, 76131, Fr.

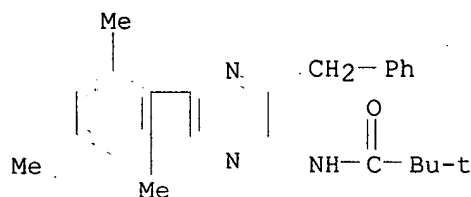
SOURCE: J. Heterocycl. Chem. (1992), 29(4), 699-702

CODEN: JHTCAD; ISSN: 0022-152X

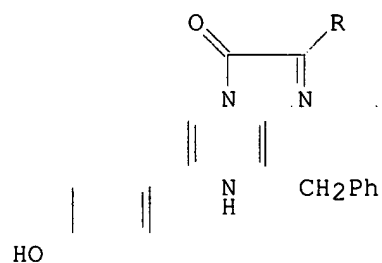
DOCUMENT TYPE: Journal

Searched by Barb O'Bryen, STIC 308-4291

LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 117:171380  
 AB Metalation of (pivalamido)pyrazine and N-(t-butyl)pyrazinamide were studied. For (pivalamido)pyrazine the yields were poor and some addn. products were isolated. The metalation of t-butylpyrazinamide was successful and a curious regioselectivity was highlighted.  
 IT 143769-10-2P, 3-Benzyl-2-(pivaloylamino)-5-mesitylpyrazine  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (regioselective prepn. of)  
 RN 143769-10-2 CAPLUS  
 CN Propanamide, 2,2-dimethyl-N-[3-(phenylmethyl)-5-(2,4,6-trimethylphenyl)pyrazinyl]- (9CI) (CA INDEX NAME)

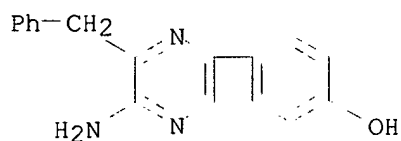


L24 ANSWER 66 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1991:656099 CAPLUS  
 DOCUMENT NUMBER: 115:256099  
 TITLE: Chemi- and bioluminescence of coelenterazine analogs.  
 Effect of substituents at the C-2 position  
 AUTHOR(S): Qi, Chen Feng; Gomi, Yasushiro; Ohashi, Mamoru;  
 Ohmiya, Yoshihiro; Tsuji, Frederick I.  
 CORPORATE SOURCE: Dep. Appl. Phys. Chem., Univ. Electro-Commun., Chofu,  
 182, Japan  
 SOURCE: J. Chem. Soc., Chem. Commun. (1991), (18), 1307-9  
 CODEN: JCCCAT; ISSN: 0022-4936  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI



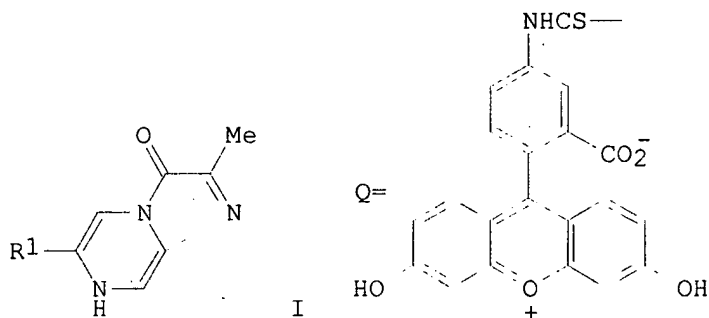
AB Light intensity measurements of recombinant aequorin and semisynthetic aequorins contg. coelenterazine analogs I [R = Me, Ph, CH2Ph, CH2CH2Ph, (CH2)3Ph] showed that a benzyl group in the C-2 position is essential for efficient luminescence activity. A two-step incubation procedure was used to det. why some analogs gave lower luminescence activities than others.  
 IT 37156-84-6  
 RL: RCT (Reactant)

(condensation of, with oxoaldehydes, coelenterazine analogs from)  
 RN 37156-84-6 CAPLUS  
 CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



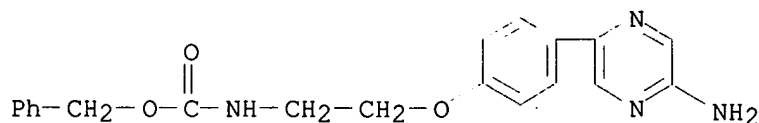
L24 ANSWER 67 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1991:164278 CAPLUS  
 DOCUMENT NUMBER: 114:164278  
 TITLE: Preparation of luciferin derivatives as chemiluminescent oxygen probes  
 INVENTOR(S): Okamoto, Kaoru; Goto, Toshio  
 PATENT ASSIGNEE(S): Nippon Zoki Pharmaceutical Co., Ltd., Japan  
 SOURCE: Eur. Pat. Appl., 10 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 389437	A1	19900926	EP 1990-810220	19900320
EP 389437	B1	19950524		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
JP 03137188	A2	19910611	JP 1990-71584	19900320
JP 3012274	B2	20000221		
US 5128069	A	19920707	US 1990-496998	19900321
PRIORITY APPLN. INFO.:			JP 1989-71037	A 19890322
			JP 1989-91578	A 19890410
OTHER SOURCE(S):		MARPAT 114:164278		
GI				

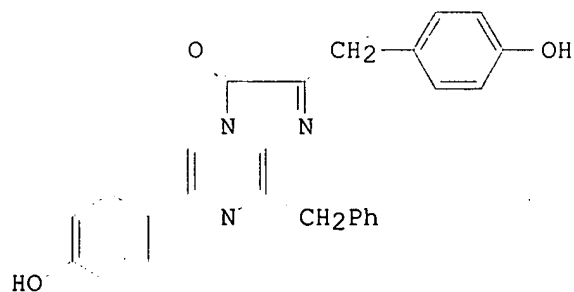


AB The title compds. [I; R1 = 4-[XNH(CH2)nO]C6H4; X = H, R, RCO, RSO2, RNHCO, RNHCS, amino-protective group; R = fluorescent group; n = 1-4] (II) were prepd. Thus, 4-(PhCH2O2CNHCH2CH2O)C6H4COCHO (prepn. given) was cyclocondensed with H2NCH2C(:NH)NH2 and the product cyclocondensed with MeCOCHO to give, after deprotection, II (X = H, n = 2) which was condensed with fluorescein isothiocyanate to give II (X = fluoresceinylthiocarbamoyl

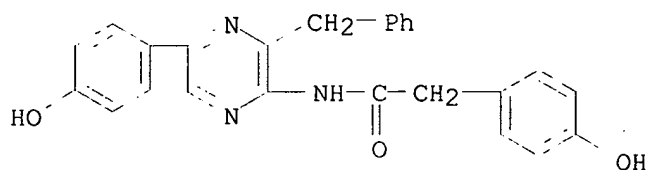
group Q, n = 2). The latter had chemiluminescent  $\lambda_{\text{max}} = 532 \text{ nm}$ .  
 IT 133118-04-4P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and reaction of, in prepn. of chemiluminescent oxygen probe)  
 RN 133118-04-4 CAPLUS  
 CN Carbamic acid, [2-[4-(5-aminopyrazinyl)phenoxy]ethyl]-, phenylmethyl ester  
 (9CI) (CA INDEX NAME)



~~124~~ ANSWER 68 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 X ACCESSION NUMBER: 1991:101506 CAPLUS  
 DOCUMENT NUMBER: 114:101506  
 TITLE: Synthesis and chemiluminescence of coelenterazine  
 (Oplophorus luciferin) analogs  
 AUTHOR(S): Teranishi, Katsunori; Goto, Toshio  
 CORPORATE SOURCE: Fac. Agric., Nagoya Univ., Nagoya, 464, Japan  
 SOURCE: Bull. Chem. Soc. Jpn. (1990), 63(11), 3132-40  
 CODEN: BCSJA8; ISSN: 0009-2673  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI



AB Effects of conformation rigidity and H-bonding with the emitter  
 coelenteramide, on the chemiluminescence efficiency of coelenterazine (I)  
 were examd. with several coelenterazine analogs. Conformational rigidity  
 has a light-enhancing effect, whereas decreasing light yield was obsd. by  
 H-bond formation with the emitter.  
 IT 50611-86-4, Coelenteramide  
 RL: PRP (Properties)  
 (electronic spectrum of)  
 RN 50611-86-4 CAPLUS  
 CN Benzeneacetamide, 4-hydroxy-N-[5-(4-hydroxyphenyl)-3-  
 (phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)

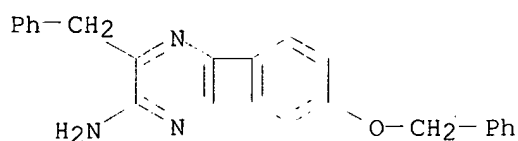


IT 132063-83-3

RL: RCT (Reactant)  
(oxidn. of)

RN 132063-83-3 CAPLUS

CN Pyrazinamine, 5-[4-(phenylmethoxy)phenyl]-3-(phenylmethyl)- (9CI) (CA INDEX NAME)

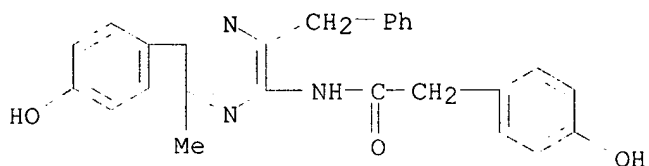


IT 132063-58-2P 132063-62-8P 132063-63-9P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and chemiluminescence spectrum of)

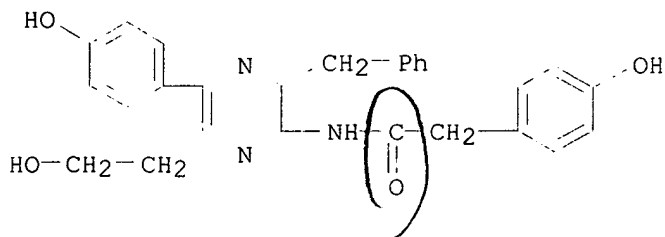
RN 132063-58-2 CAPLUS

CN Benzeneacetamide, 4-hydroxy-N-[5-(4-hydroxyphenyl)-6-methyl-3-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



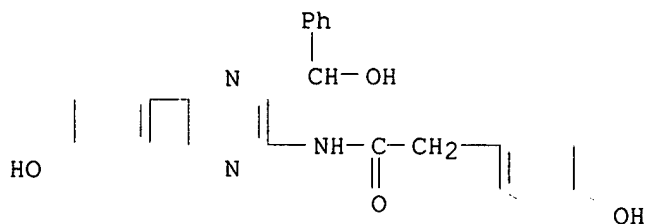
RN 132063-62-8 CAPLUS

CN Benzeneacetamide, 4-hydroxy-N-[6-(2-hydroxyethyl)-5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



RN 132063-63-9 CAPLUS

CN Benzeneacetamide, 4-hydroxy-N-[5-(4-hydroxyphenyl)-3-(hydroxyphenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)

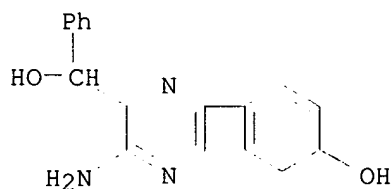


IT 132063-86-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and cyclocondensation of, with aryloxopropanal, imidazopyrazine from)

RN 132063-86-6 CAPLUS

CN Pyrazinemethanol, 3-amino-6-(4-hydroxyphenyl)-.alpha.-phenyl- (9CI) (CA INDEX NAME)

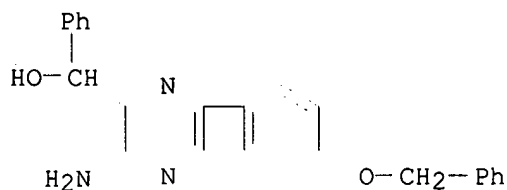


IT 132063-85-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and debenzoylation of)

RN 132063-85-5 CAPLUS

CN Pyrazinemethanol, 3-amino-.alpha.-phenyl-6-[4-(phenylmethoxy)phenyl]- (9CI) (CA INDEX NAME)



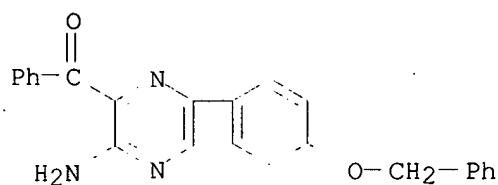
IT 132063-84-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and hydride redn. of)

RN 132063-84-4 CAPLUS

CN Methanone, [3-amino-6-[4-(phenylmethoxy)phenyl]pyrazinyl]phenyl- (9CI)  
(CA INDEX NAME)



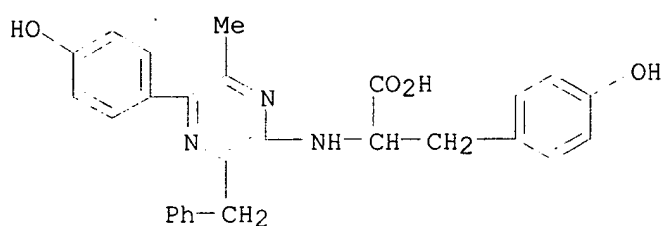


IT 132063-77-5P 132063-80-0P 132063-82-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and intramol. cyclocondensation of, imidazopyrazine from)

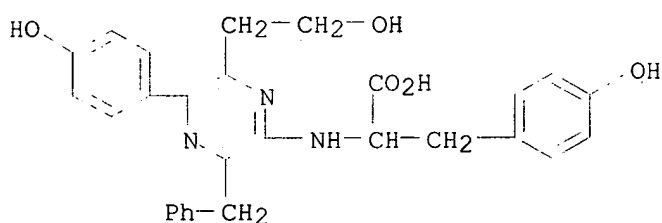
RN 132063-77-5 CAPLUS

CN Tyrosine, N-[5-(4-hydroxyphenyl)-6-methyl-3-(phenylmethyl)pyrazinyl]-  
(9CI) (CA INDEX NAME)



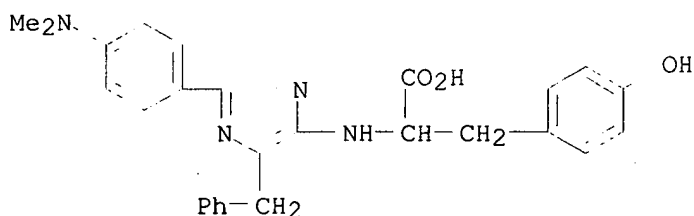
RN 132063-80-0 CAPLUS

CN Tyrosine, N-[6-(2-hydroxyethyl)-5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



RN 132063-82-2 CAPLUS

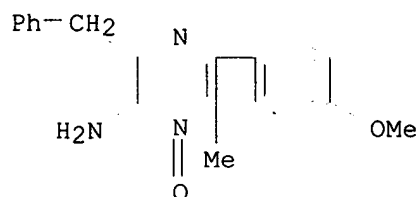
CN Tyrosine, N-[5-[4-(dimethylamino)phenyl]-3-(phenylmethyl)pyrazinyl]- (9CI)  
(CA INDEX NAME)



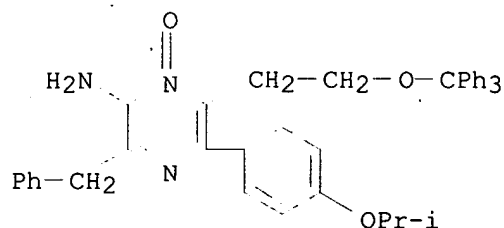
IT 123437-81-0P 132063-70-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and redn. of)

RN 123437-81-0 CAPLUS  
 CN Pyrazinamine, 5-(4-methoxyphenyl)-6-methyl-3-(phenylmethyl)-, 1-oxide  
 (9CI) (CA INDEX NAME)

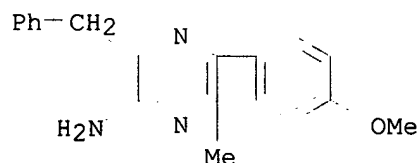


RN 132063-70-8 CAPLUS  
 CN Pyrazinamine, 5-[4-(1-methylethoxy)phenyl]-3-(phenylmethyl)-6-[2-(triphenylmethoxy)ethyl]-, 1-oxide (9CI) (CA INDEX NAME)



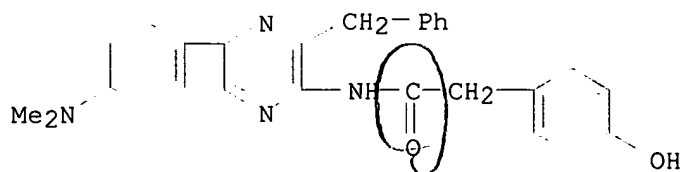
IT 123437-91-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and O-demethylation of)

RN 123437-91-2 CAPLUS  
 CN Pyrazinamine, 5-(4-methoxyphenyl)-6-methyl-3-(phenylmethyl)- (9CI) (CA INDEX NAME)

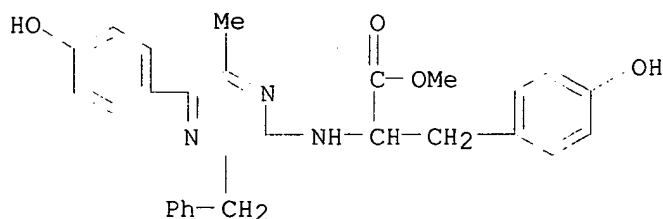


IT 132063-65-1P 132063-87-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)

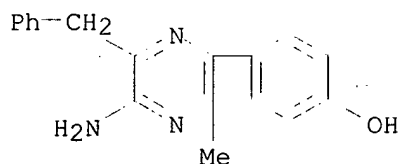
RN 132063-65-1 CAPLUS  
 CN Benzeneacetamide, N-[5-[4-(dimethylamino)phenyl]-3-(phenylmethyl)pyrazinyl]-4-hydroxy- (9CI) (CA INDEX NAME)



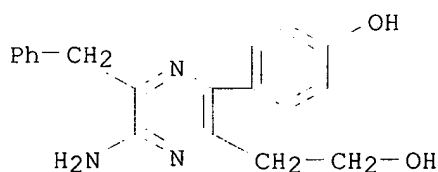
RN 132063-87-7 CAPLUS  
 CN Tyrosine, N-[5-(4-hydroxyphenyl)-6-methyl-3-(phenylmethyl)pyrazinyl]-, methyl ester (9CI) (CA INDEX NAME)



IT 123437-58-1P 132063-74-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn., N-acetylation, and condensation of, with aryloxopropanal)  
 RN 123437-58-1 CAPLUS  
 CN Phenol, 4-[5-amino-3-methyl-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



RN 132063-74-2 CAPLUS  
 CN Pyrazineethanol, 6-amino-3-(4-hydroxyphenyl)-5-(phenylmethyl)- (9CI) (CA INDEX NAME)



124 ANSWER 69 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1990:529564 CAPLUS

DOCUMENT NUMBER: 113:129564

TITLE: Detection of coelenterazine and related luciferase activity in the tissues of the luminous fish, *Vinciguerrria attenuata*

AUTHOR(S): Rees, J. F.; Thompson, E. M.; Baguet, F.; Tsuji, F. I.

CORPORATE SOURCE: Lab. Anim. Physiol., Cathol. Univ. Louvain, Louvain-la-Neuve, B-1348, Belg.

SOURCE: Comp. Biochem. Physiol., A: Comp. Physiol. (1990), 96A(3), 425-30

CODEN: CBPAB5; ISSN: 0300-9629

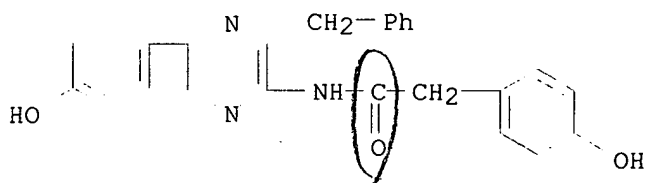
DOCUMENT TYPE: Journal

LANGUAGE: English

AB An attempt was made to identify the components of the light-emitting system of the bioluminescent fish, *V. attenuata* (Photichthyidae).

Methanol exts. of the digestive tract and body tissues were analyzed by HPLC. Assays for the detection of coelenterazine or Vargula luciferin were performed on the collected fractions. The corresponding luciferase activities were also assayed in the solid residues. No cross-reactions with Vargula luciferase and luciferin were detected. Coelenterazine was detected in the tissues of the fish. The coelenterazine content of the digestive tract represented as much as 95% of the total coelenterazine content of the fish. Luciferase activity, specific for coelenterazine, was absent from the digestive tract, but present in the rest of the body. Thus, the luminescent system in Vinciguerria photophores is of the coelenterate type. Coelenterazine distribution in the tissues of the fish suggests that it might be obtained from the diet.

IT 50611-86-4, Coelenteramide  
 RL: BIOL (Biological study)  
 (of luminous fish)  
 RN 50611-86-4 CAPLUS  
 CN Benzeneacetamide, 4-hydroxy-N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



L24 ANSWER 70 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1991:2235 CAPLUS  
 DOCUMENT NUMBER: 114:2235  
 TITLE: Evaluation of the control of mosquitoes with insect growth regulators  
 AUTHOR(S): Ho, Chau Mei; Wu, Shy Huey; Wu, Chin Chen  
 CORPORATE SOURCE: Dep. Parasitol., Natl. YangMing Med. Coll., Taipei, 11221, Taiwan  
 SOURCE: Kao-hsiung I Hsueh K'o Hsueh Tsa Chih (1990), 6(7), 366-74  
 CODEN: KHHCE2; ISSN: 0257-5655  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB The effectiveness of 8 insect growth regulators (IGRs) (chlorfluazuron, diflubenzuron, EL-494, flufenoxuron, teflubenzuron, juglone, plumbagin, and methoprene) against 5 mosquito vectors (*Armigeres subalbatus*, *Aedes albopictus*, *Aedes aegypti*, *Culex tritaeniorhynchus*, and *C. quinquefasciatus*) was investigated in the lab. The ED50s of chlorfluazuron, diflubenzuron, EL-494, flufenoxuron, teflubenzuron, and methoprene against the 5 mosquitoes ranged from 0.0001 to 0.3 ppm and those of juglone and plumbagin 3-25 ppm. The 5 mosquito species had similar tolerances to the test IGRs. At pH 5-9, the effectiveness of the first 5 chems. was very stable. After UV irradiation or heating (45-60.degree.), diflubenzuron and flufenoxuron were very stable. EL-494 was not stable when exposed to UV irradiation or heat. Under 0.1 ppm, teflubenzuron was not stable upon exposure to heat, and chlorfluazuron and methoprene were not stable to UV irradiation. Piperonyl butoxide reduced the effectiveness of the 5 IGRs. Diflubenzuron (1-5 ppm), flufenoxuron (0.025 ppm), and teflubenzuron (1-5 ppm) controlled *C. quinquefasciatus* larvae in ditches by 40-90%. Diflubenzuron (0.5 ppm) in contained controlled 97% *Aedes albopictus* larvae.

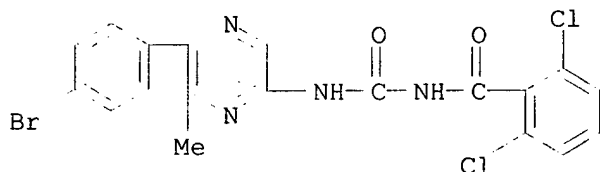
IT 59489-59-7, EL-494

RL: BIOL (Biological study)

(mosquito control by, in ditches and containers)

RN 59489-59-7 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)



L24 ANSWER 71 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1990:50616 CAPLUS

DOCUMENT NUMBER: 112:50616

TITLE: Synergistic insecticides containing insect growth inhibitors

INVENTOR(S): Narasaki, Mitsutoshi; Morita, Hisao; Fujisaki, Takayoshi

PATENT ASSIGNEE(S): Mikasa Chemical Industrial Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01016706	A2	19890120	JP 1987-173368	19870711
JP 2533880	B2	19960911		

AB An insecticidal compn. contains (1) an inhibitor of chitin formation, an inhibitor of pest growth, and a juvenile hormone, etc., and (2) a synergistic aldehyde, alc., ketone, ether, etc. Thus, an insecticidal emulsion was prepd. consisting of diflubenzuron 5, octyl aldehyde 15, DMF 35, Ca dodecylbenzenesulfonate 3, polyoxyethylene octylphenyl ether 12, and xylene 30 parts by wt. Fifteen insect growth regulators and 23 synergistic agents were presented. Insecticidal activities against flies and mosquitoes were demonstrated.

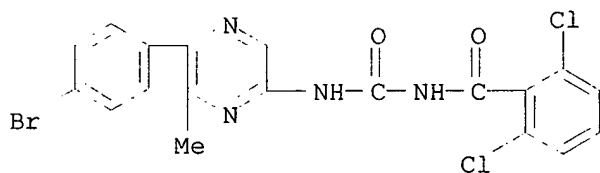
IT 59489-59-7, EL-494 69816-57-5, L-7063

RL: BIOL (Biological study)

(as insect growth inhibitor, synergistic insecticide contg.)

RN 59489-59-7 CAPLUS

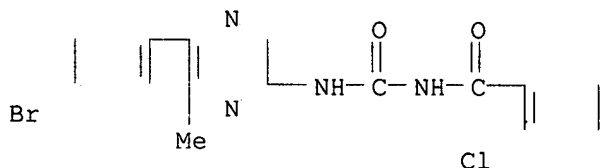
CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)



RN 69816-57-5 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2-

chloro- (9CI) (CA INDEX NAME)



124 ANSWER 72 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1990:7459 CAPLUS

DOCUMENT NUMBER: 112:7459

TITLE: No electron-donating substituent effect on the singlet excited state formation from the 5-(5-aryl-2-pyrazinylamino)-1,2,4-trioxanes in dimethyl sulfoxide triggered by potassium tert-butoxide

AUTHOR(S): Teranishi, Katsunori; Goto, Toshio

CORPORATE SOURCE: Fac. Agric., Nagoya Univ., Nagoya, 464, Japan

SOURCE: Bull. Chem. Soc. Jpn. (1989), 62(6), 2009-12

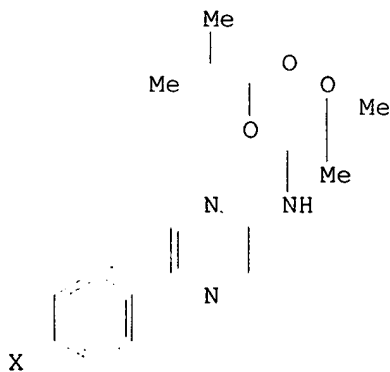
CODEN: BCSJA8; ISSN: 0009-2673

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 112:7459

GI



AB 5-(5-Phenyl-2-pyrazinylamino)-1,2,4-trioxane derivs., e.g. I (X = OH, NMe<sub>2</sub>), having a substituent on the 4 position of the Ph group gave chemiluminescence in DMSO by addn. of KOCMe<sub>3</sub>. No electron-donating substituent effect was obsd. on the yield of singlet excited state formation. This may be explained by the neg. charge formed on the N atom next to the transient dioxetane moiety, which may produce a singlet excited-state mol. by the intramol. electron-exchange luminescence mechanism.

IT 123695-80-7P 123695-81-8P 123695-82-9P  
123695-83-0P

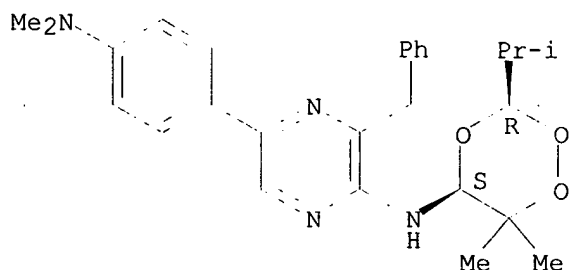
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and chemiluminescence of)

RN 123695-80-7 CAPLUS

CN Pyrazinamine, 5-[4-(dimethylamino)phenyl]-N-[6,6-dimethyl-3-(1-

methylethyl)-1,2,4-trioxan-5-yl]-3-(phenylmethyl)-, cis- (9CI) (CA INDEX NAME)

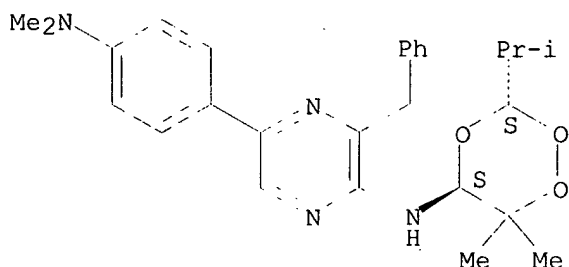
Relative stereochemistry.



RN 123695-81-8 CAPLUS

CN Pyrazinamine, 5-[4-(dimethylamino)phenyl]-N-[6,6-dimethyl-3-(1-methylethyl)-1,2,4-trioxan-5-yl]-3-(phenylmethyl)-, trans- (9CI) (CA INDEX NAME)

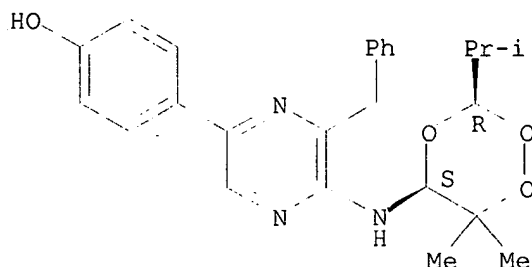
Relative stereochemistry.



RN 123695-82-9 CAPLUS

CN Phenol, 4-[5-[[6,6-dimethyl-3-(1-methylethyl)-1,2,4-trioxan-5-yl]amino]-6-(phenylmethyl)pyrazinyl]-, cis- (9CI) (CA INDEX NAME)

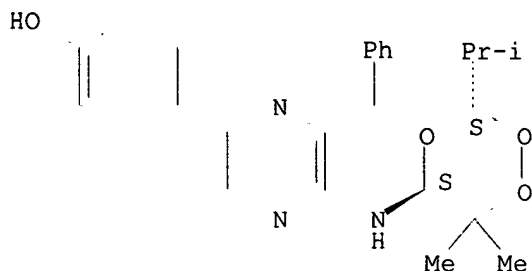
Relative stereochemistry.



RN 123695-83-0 CAPLUS

CN Phenol, 4-[5-[[6,6-dimethyl-3-(1-methylethyl)-1,2,4-trioxan-5-yl]amino]-6-(phenylmethyl)pyrazinyl]-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.

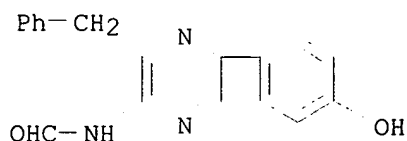


IT 123695-84-1P 123695-85-2P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and fluorescence of)

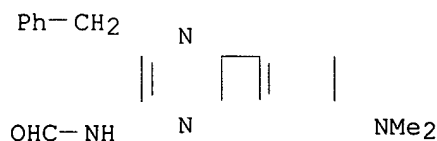
RN 123695-84-1 CAPLUS

CN Formamide, N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA  
INDEX NAME)



RN 123695-85-2 CAPLUS

CN Formamide, N-[5-[4-(dimethylamino)phenyl]-3-(phenylmethyl)pyrazinyl]-  
(9CI) (CA INDEX NAME)

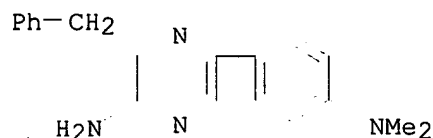


IT 123695-78-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and reaction of, with isobutyraldehyde or acetic formic  
anhydride)

RN 123695-78-3 CAPLUS

CN Pyrazinamine, 5-[4-(dimethylamino)phenyl]-3-(phenylmethyl)- (9CI) (CA  
INDEX NAME)



IT 123695-79-4P

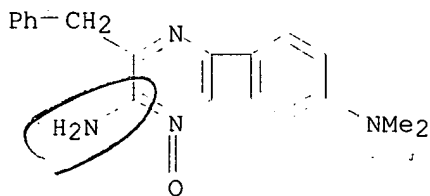
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and redn. of)

RN 123695-79-4 CAPLUS

CN Pyrazinamine, 5-[4-(dimethylamino)phenyl]-3-(phenylmethyl)-, 1-oxide (9CI)



(CA INDEX NAME)



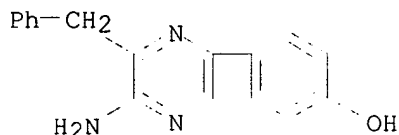
IT 37156-84-6

RL: RCT (Reactant)

(reaction of, with isobutyraldehyde or acetic formic anhydride)

RN 37156-84-6 CAPLUS

CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



124 ANSWER 73 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1990:35541 CAPLUS

DOCUMENT NUMBER: 112:35541

TITLE: Effects of conformational rigidity and hydrogen bonding in the emitter on the chemiluminescence efficiency of coelenterazine (Oplophorus luciferin)

AUTHOR(S): Teranishi, Katsunori; Goto, Toshio

CORPORATE SOURCE: Fac. Agric., Nagoya Univ., Nagoya, 464, Japan

SOURCE: Chem. Lett. (1989), (8), 1423-6

CODEN: CMLTAG; ISSN: 0366-7022

DOCUMENT TYPE: Journal

LANGUAGE: English

AB In the case of chemiluminescence of coelenterazine, effects of conformational rigidity of and hydrogen-bonding with the emitter, coelenteramide, on the chemiluminescence efficiency have been examd. Conformational rigidity has a light enhancing effect; decreasing light yield was obsd. by hydrogen bond formation with the emitter.

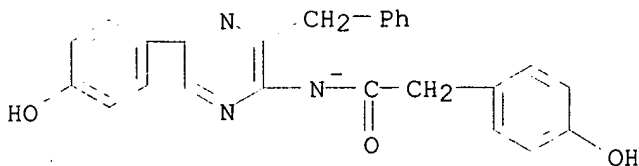
IT 124469-75-6

RL: PRP (Properties)

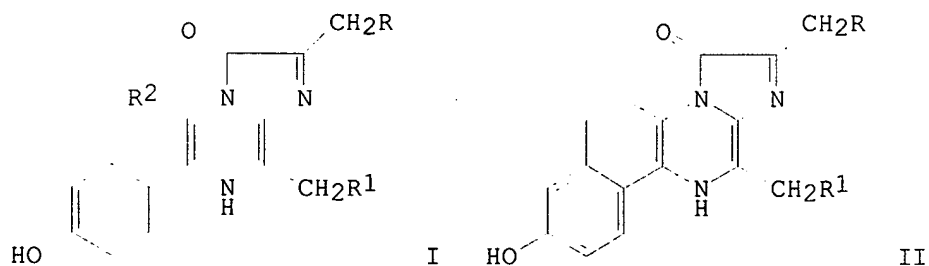
(chemiluminescence of)

RN 124469-75-6 CAPLUS

CN Benzeneacetamide, 4-hydroxy-N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]-, ion(1-) (9CI) (CA INDEX NAME)



124 ANSWER 74 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1989:594444 CAPLUS  
 DOCUMENT NUMBER: 111:194444  
 TITLE: Semi-synthetic aequorins with improved sensitivity to calcium ions  
 AUTHOR(S): Shimomura, Osamu; Musicki, Branislav; Kishi, Yoshito  
 CORPORATE SOURCE: Mar. Biol. Lab., Woods Hole, MA, 02543, USA  
 SOURCE: Biochem. J. (1989), 261(3), 913-20  
 CODEN: BIJOAK; ISSN: 0306-3275  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI



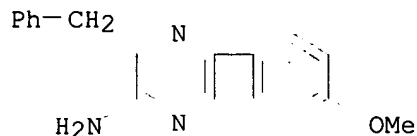
AB Coelenterazine analogs I and II (R = Ph, substituted Ph, 2-naphthyl; R1 = Ph, alkyl, cycloalkyl; R2 = H, Me) were synthesized and incorporated into apo-aequorin, yielding 30 semi-synthetic aequorins that have the capacity to emit a significant amt. of light in the presence of Ca<sup>2+</sup>. The properties of resultant photoproteins were investigated. The most prominent feature of those photoproteins was the wide range in their sensitivities to Ca<sup>2+</sup> concn. The relative intensity of Ca<sup>2+</sup>-triggered luminescence of the photoproteins ranged from 0.01 to 190 when compared with natural aequorin (relative intensity 1.0) at pCa 6 for the cases where the relative intensity is <1 and at pCa 7 for the cases where the relative intensity is >1. With two II, the degree of dependence of the luminescence intensity ratio I403/I465 on pCa was greater than that with e-aequorin, suggesting that these two photoproteins are possibly superior to e-aequorin in measuring Ca<sup>2+</sup> concn. by the ratio method.

IT 40040-81-1P 123437-85-4P 123437-86-5P  
 123437-87-6P 123437-88-7P 123437-89-8P  
 123437-90-1P 123437-91-2P 123462-96-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and demethylation of)

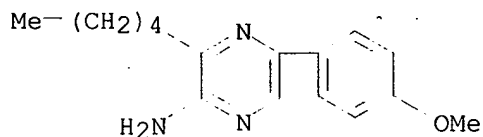
RN 40040-81-1 CAPLUS

CN Pyrazinamine, 5-(4-methoxyphenyl)-3-(phenylmethyl)- (9CI) (CA INDEX NAME)

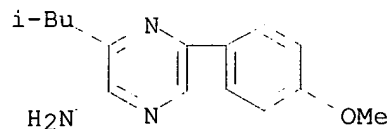


RN 123437-85-4 CAPLUS

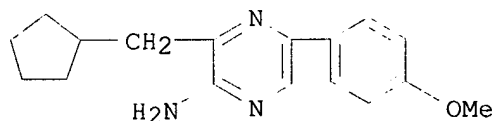
CN Pyrazinamine, 5-(4-methoxyphenyl)-3-pentyl- (9CI) (CA INDEX NAME)



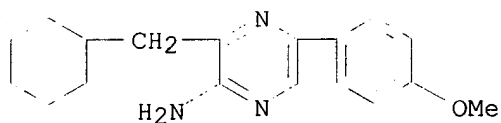
RN 123437-86-5 CAPLUS  
 CN Pyrazinamine, 5-(4-methoxyphenyl)-3-(2-methylpropyl)- (9CI) (CA INDEX NAME)



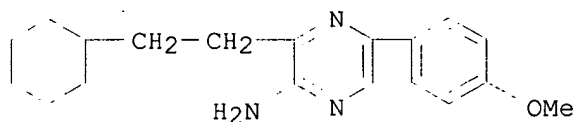
RN 123437-87-6 CAPLUS  
 CN Pyrazinamine, 3-(cyclopentylmethyl)-5-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



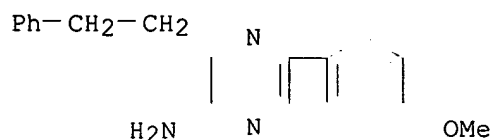
RN 123437-88-7 CAPLUS  
 CN Pyrazinamine, 3-(cyclohexylmethyl)-5-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



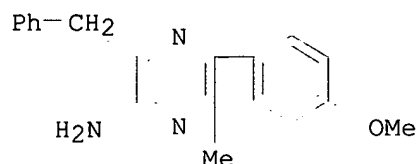
RN 123437-89-8 CAPLUS  
 CN Pyrazinamine, 3-(2-cyclohexylethyl)-5-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



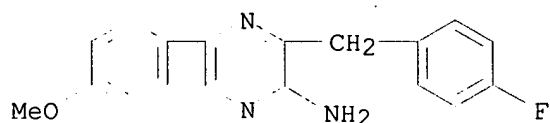
RN 123437-90-1 CAPLUS  
 CN Pyrazinamine, 5-(4-methoxyphenyl)-3-(2-phenylethyl)- (9CI) (CA INDEX NAME)



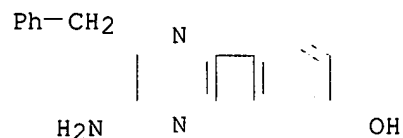
RN 123437-91-2 CAPLUS  
 CN Pyrazinamine, 5-(4-methoxyphenyl)-6-methyl-3-(phenylmethyl)- (9CI) (CA INDEX NAME)



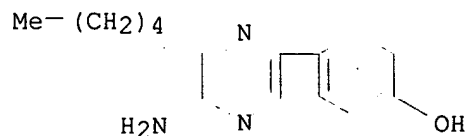
RN 123462-96-4 CAPLUS  
 CN Pyrazinamine, 3-[(4-fluorophenyl)methyl]-5-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



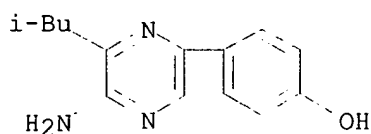
IT 37156-84-6P 123437-52-5P 123437-53-6P  
 123437-54-7P 123437-55-8P 123437-56-9P  
 123437-57-0P 123437-58-1P 123438-06-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and reaction of, with benzyl glyoxals)  
 RN 37156-84-6 CAPLUS  
 CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



RN 123437-52-5 CAPLUS  
 CN Phenol, 4-(5-amino-6-pentylpyrazinyl)- (9CI) (CA INDEX NAME)

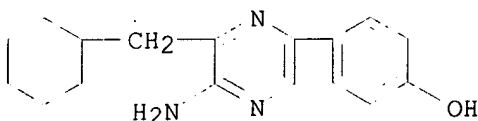


RN 123437-53-6 CAPLUS  
 CN Phenol, 4-[5-amino-6-(2-methylpropyl)pyrazinyl]- (9CI) (CA INDEX NAME)



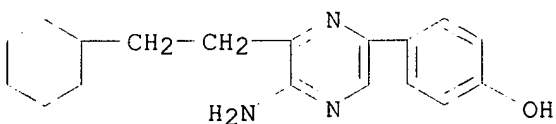
RN 123437-54-7 CAPLUS

CN Phenol, 4-[5-amino-6-(cyclohexylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



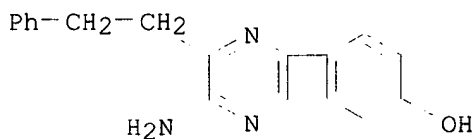
RN 123437-55-8 CAPLUS

CN Phenol, 4-[5-amino-6-(2-cyclohexylethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



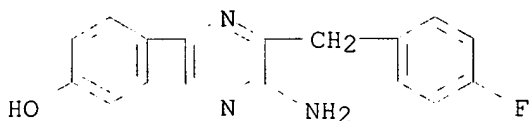
RN 123437-56-9 CAPLUS

CN Phenol, 4-[5-amino-6-(2-phenylethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



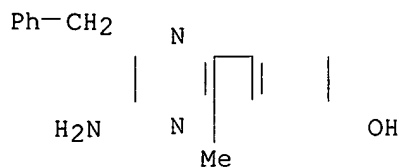
RN 123437-57-0 CAPLUS

CN Phenol, 4-[5-amino-6-[(4-fluorophenyl)methyl]pyrazinyl]- (9CI) (CA INDEX NAME)

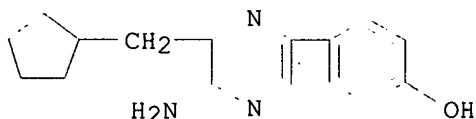


RN 123437-58-1 CAPLUS

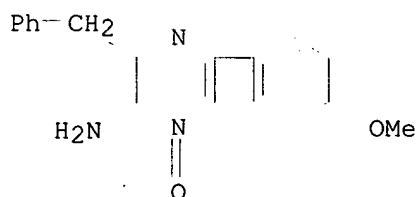
CN Phenol, 4-[5-amino-3-methyl-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



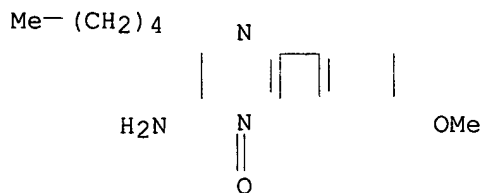
RN 123438-06-2 CAPLUS  
 CN Phenol, 4-[5-amino-6-(cyclopentylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



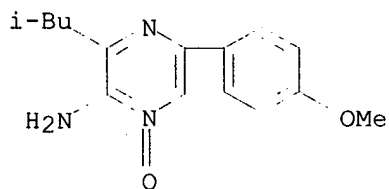
IT 123437-73-0P 123437-74-1P 123437-75-2P  
 123437-76-3P 123437-77-4P 123437-78-5P  
 123437-79-6P 123437-80-9P 123437-81-0P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and redn. of)  
 RN 123437-73-0 CAPLUS  
 CN Pyrazinamine, 5-(4-methoxyphenyl)-3-(phenylmethyl)-, 1-oxide (9CI) (CA INDEX NAME)



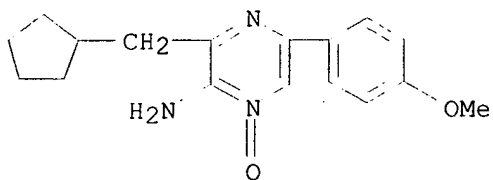
RN 123437-74-1 CAPLUS  
 CN Pyrazinamine, 5-(4-methoxyphenyl)-3-pentyl-, 1-oxide (9CI) (CA INDEX NAME)



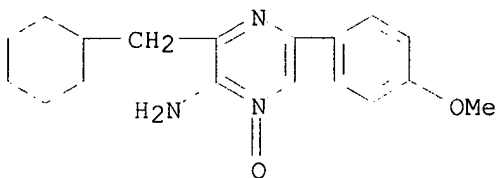
RN 123437-75-2 CAPLUS  
 CN Pyrazinamine, 5-(4-methoxyphenyl)-3-(2-methylpropyl)-, 1-oxide (9CI) (CA INDEX NAME)



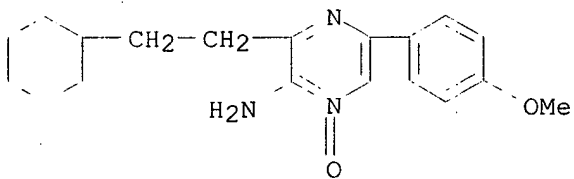
RN 123437-76-3 CAPLUS  
 CN Pyrazinamine, 3-(cyclopentylmethyl)-5-(4-methoxyphenyl)-, 1-oxide (9CI)  
 (CA INDEX NAME)



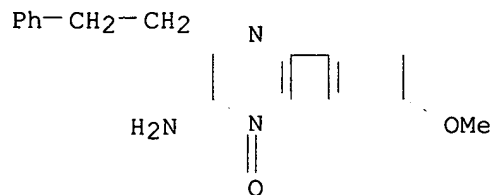
RN 123437-77-4 CAPLUS  
 CN Pyrazinamine, 3-(cyclohexylmethyl)-5-(4-methoxyphenyl)-, 1-oxide (9CI)  
 (CA INDEX NAME)



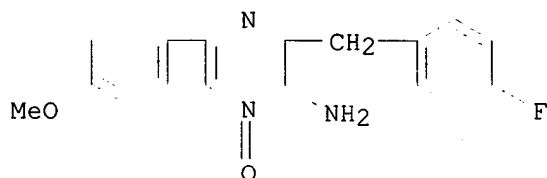
RN 123437-78-5 CAPLUS  
 CN Pyrazinamine, 3-(2-cyclohexylethyl)-5-(4-methoxyphenyl)-, 1-oxide (9CI)  
 (CA INDEX NAME)



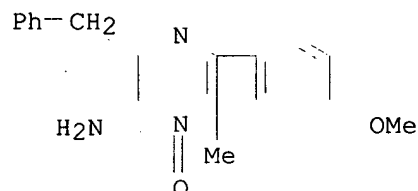
RN 123437-79-6 CAPLUS  
 CN Pyrazinamine, 5-(4-methoxyphenyl)-3-(2-phenylethyl)-, 1-oxide (9CI) (CA  
 INDEX NAME)



RN 123437-80-9 CAPLUS  
 CN Pyrazinamine, 3-[(4-fluorophenyl)methyl]-5-(4-methoxyphenyl)-, 1-oxide  
 (9CI) (CA INDEX NAME)



RN 123437-81-0 CAPLUS  
 CN Pyrazinamine, 5-(4-methoxyphenyl)-6-methyl-3-(phenylmethyl)-, 1-oxide  
 (9CI) (CA INDEX NAME)



124 ANSWER 75 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1989:152319 CAPLUS

DOCUMENT NUMBER: 110:152319

TITLE: A sensitive and specific chemiluminescence method for estimating the ability of human granulocytes and monocytes to generate superoxide anion

AUTHOR(S): Nishida, Akira; Kimura, Hirokazu; Nakano, Minoru; Goto, Toshio

CORPORATE SOURCE: Coll. Med. Care Technol., Gunma Univ., Maebashi, 371, Japan

SOURCE: Clin. Chim. Acta (1989), 179(2), 177-81

CODEN: CCATAR; ISSN: 0009-8981

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A new chemiluminescence (CL) probe 2-methyl-6-[p-methoxyphenyl]-3,7-dihydroimidazo[1,2- $\alpha$ ]pyrazin-3-one (MCLA) was prepd. and used to measure CL emitted by either granulocytes or monocytes in the presence of opsonized zymosan in Hank's balanced salt soln. The CL, measured at 465 nm, is due to the formation by the cells of O<sub>2</sub><sup>-</sup>. Luminescence with MCLA is 4.6-fold brighter than the luciferin analog previously used.

IT 119738-50-0

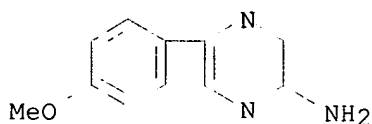
RL: RCT (Reactant)



(reaction of, with methylglyoxal)

RN 119738-50-0 CAPLUS

CN Pyrazinamine, 5-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



124 ANSWER 76 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1989:231588 CAPLUS

DOCUMENT NUMBER: 110:231588

TITLE: Synthesis of chemiluminescence of 5-[(2-pyridyl)-, (2-pyrazinyl)-, and (substituted 2-pyrazinyl)amino]-1,2,4-trioxanes

AUTHOR(S): Nakamura, Hideshi; Goto, Toshio

CORPORATE SOURCE: Fac. Agric., Nagoya Univ., Nagoya, 464, Japan

SOURCE: Bull. Chem. Soc. Jpn. (1988), 61(10), 3776-8

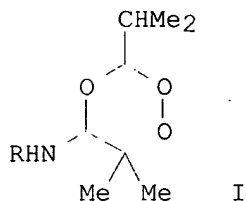
CODEN: BCSJA8; ISSN: 0009-2673

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 110:231588

GI



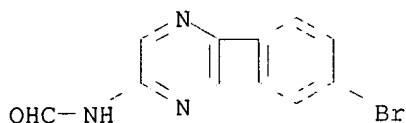
AB From pyridyl- and pyridinylamines and isobutyraldehyde were prepd. the resp. 5-arylamino-1,2,4-trioxanes I (R = 9-anthryl, 2-pyridyl, 2-pyrazinyl, 5-methyl-2-pyrazinyl, 5-phenyl-2-pyrazinyl, etc.) whose chemiluminescence was studied by comparison with those of Cypridina luciferin analogs.

IT 120821-84-3P 120821-85-4P 120821-86-5P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (prepn. and fluorescence of, quantum efficiency of)

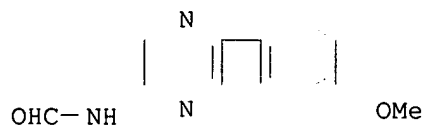
RN 120821-84-3 CAPLUS

CN Formamide, N-[5-(4-bromophenyl)pyrazinyl]- (9CI) (CA INDEX NAME)



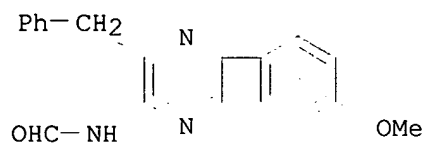
RN 120821-85-4 CAPLUS

CN Formamide, N-[5-(4-methoxyphenyl)pyrazinyl]- (9CI) (CA INDEX NAME)



RN 120821-86-5 CAPLUS

CN Formamide, N-[5-(4-methoxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)

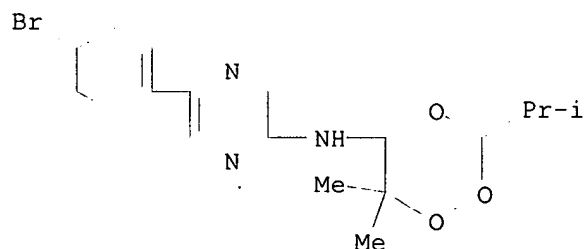


IT 120821-79-6P 120821-80-9P 120821-81-0P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

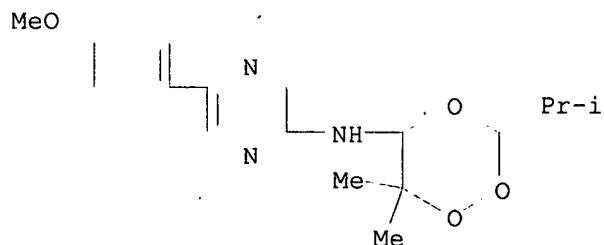
RN 120821-79-6 CAPLUS

CN Pyrazinamine, 5-(4-bromophenyl)-N-[6,6-dimethyl-3-(1-methylethyl)-1,2,4-trioxan-5-yl]- (9CI) (CA INDEX NAME)



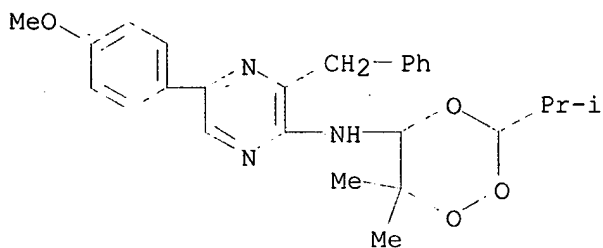
RN 120821-80-9 CAPLUS

CN Pyrazinamine, N-[6,6-dimethyl-3-(1-methylethyl)-1,2,4-trioxan-5-yl]-5-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



RN 120821-81-0 CAPLUS

CN Pyrazinamine, N-[6,6-dimethyl-3-(1-methylethyl)-1,2,4-trioxan-5-yl]-5-(4-methoxyphenyl)-3-(phenylmethyl)- (9CI) (CA INDEX NAME)



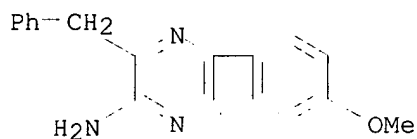
IT 40040-81-1 69816-47-3 119738-50-0

RL: RCT (Reactant)

(reaction of, with isobutyraldehyde in the presence of oxygen,  
trioxanes from)

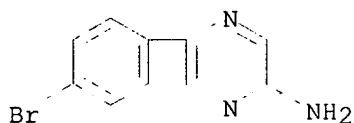
RN 40040-81-1 CAPLUS

CN Pyrazinamine, 5-(4-methoxyphenyl)-3-(phenylmethyl)- (9CI) (CA INDEX NAME)



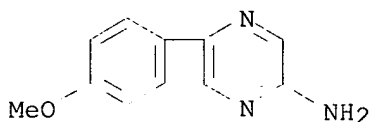
RN 69816-47-3 CAPLUS

CN Pyrazinamine, 5-(4-bromophenyl)- (9CI) (CA INDEX NAME)



RN 119738-50-0 CAPLUS

CN Pyrazinamine, 5-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



ANSWER 77 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1988:186699 CAPLUS

DOCUMENT NUMBER: 108:186699

TITLE: An efficient synthesis of arylpyrazines and  
bipyridines

AUTHOR(S): Thompson, Wayne J.; Jones, James H.; Lyle, Paulette  
A.; Thies, J. Eric

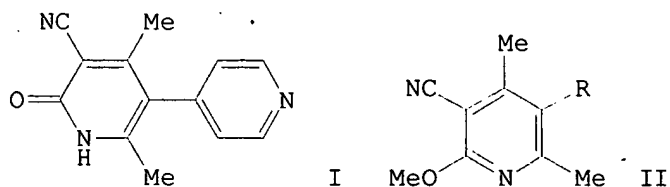
CORPORATE SOURCE: Merck Sharp and Dohme Res. Lab., West Point, PA,  
19486, USA

SOURCE: J. Org. Chem. (1988), 53(9), 2052-5

CODEN: JOCEAH; ISSN: 0022-3263

Searched by Barb O'Bryen, STIC 308-4291

DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 108:186699  
 GI



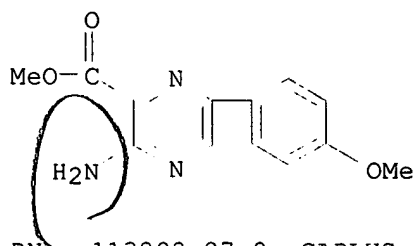
AB The coupling of chloro- or bromopyrazines and -pyridines with areneboronic acids in the presence of Pd(0) catalysts is described. By use of the appropriate catalyst, the coupling of pyridineboronic acids was also achieved. A convergent synthesis of the previously unknown 4-Me deriv. of the cardiotoxic milrinone (I) is also described. Thus, coupling of bromopyridine II (R = Br) with 4-pyridineboronic acid in the presence of Pd(OAc)<sub>2</sub> and 1,1'-bis(diphenylphosphino)ferrocene gave 22% of the substituted bipyrindine II (R = 4-pyridyl). Hydrolysis of II (R = 4-pyridyl) gave 85% I.

IT 113892-84-5P 113892-87-8P 113892-91-4P  
 113892-99-2P

RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)

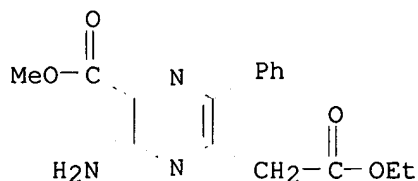
RN 113892-84-5 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-6-(4-methoxyphenyl)-, methyl ester (9CI)  
 (CA INDEX NAME)



RN 113892-87-8 CAPLUS

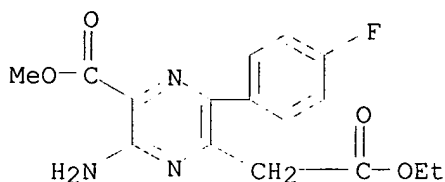
CN Pyrazineacetic acid, 6-amino-5-(methoxycarbonyl)-3-phenyl-, ethyl ester  
 (9CI) (CA INDEX NAME)



RN 113892-91-4 CAPLUS

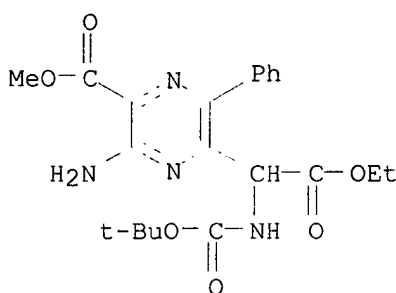
CN Pyrazineacetic acid, 6-amino-3-(4-fluorophenyl)-5-(methoxycarbonyl)-,

ethyl ester (9CI) (CA INDEX NAME)



RN 113892-99-2 CAPLUS

CN Pyrazineacetic acid, 6-amino-.alpha.-[[[(1,1-dimethylethoxy)carbonyl]amino]-5-(methoxycarbonyl)-3-phenyl-, ethyl ester (9CI) (CA INDEX NAME)



124 ANSWER 78 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1988:549170 CAPLUS

DOCUMENT NUMBER: 109:149170

TITLE: Unequivocal syntheses of 6-methyl- and 6-phenylisoxanthopterin

AUTHOR(S): Neilsen, J. Bryant; Broadbent, H. Smith; Hennen, William J.

CORPORATE SOURCE: Dep. Chem., Brigham Young Univ., Provo, UT, 84604, USA

SOURCE: J. Heterocycl. Chem. (1987), 24(6), 1621-8

CODEN: JHTCAD; ISSN: 0022-152X

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 109:149170

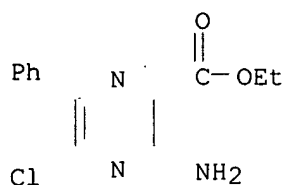
AB Although 6-methyl- and 6-phenylisoxanthopterin have previously been synthesized, the requirement of high purity necessary for immunol. testing necessitated the first reported synthesis of these compds. by unequivocal methods. Four new pyrazines, Et 3-amino-5-chloro-6-methyl-2-pyrazinecarboxylate, N,N-dimethyl-N'-(6-chloro-3-cyano-5-phenylpyrazin-2-yl)methanimidamide, 2-amino-3-ethoxycarbonyl-5-phenylpyrazine 1-oxide, and Et 3-amino-5-chloro-6-phenyl-2-pyrazinecarboxylate and 4 new pteridines, 7-methoxy-6-methyl-2,4-pteridinediamine, 7-methoxy-6-phenyl-2,4-pteridinediamine, 2-amino-7-ethoxy-6-methyl-4(3H)-pteridinone, and 2-amino-7-ethoxy-6-phenyl-4(3H)-pteridinone were also prep'd. en route to these isoxanthopterins.

IT 116616-68-3P

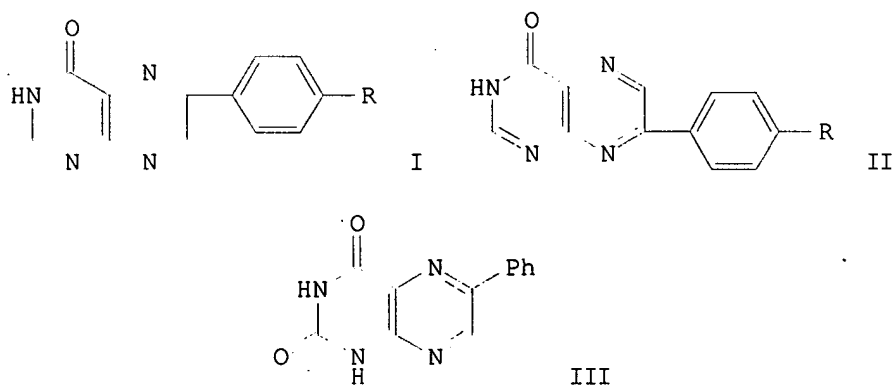
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and cyclocondensation reaction of, with guanidine, pteridinone deriv. from)

RN 116616-68-3 CAPLUS

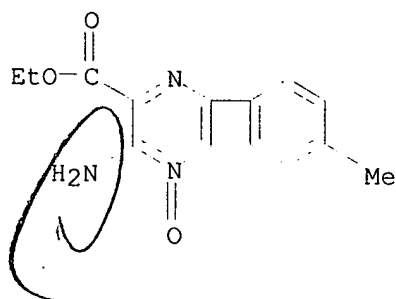
CN Pyrazinecarboxylic acid, 3-amino-5-chloro-6-phenyl-, ethyl ester (9CI)  
(CA INDEX NAME)



124 ANSWER 79 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1988:112044 CAPLUS  
 DOCUMENT NUMBER: 108:112044  
 TITLE: The use of immobilized enzymes and bacterial cells in organic synthesis. Part 16. The oxidation of 6- and 7-aryl-4(3H)-pteridinones by immobilized Arthrobacter M-4 cells containing xanthine oxidase  
 AUTHOR(S): De Meester, Johan W. G.; Van der Plas, Henk C.; Middelhoven, Wouter J.  
 CORPORATE SOURCE: Dep. Org. Chem., Wageningen, 6703 BC, Neth.  
 SOURCE: J. Heterocycl. Chem. (1987), 24(2), 441-51  
 CODEN: JHTCAD; ISSN: 0022-152X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 108:112044  
 GI

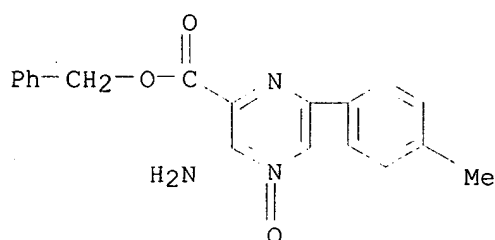


AB 6- And 7-(p-substituted phenyl)-4(3H)-pteridinones I and II (R = H, Me, MeO) were prepd. The oxidn. of these compds. by immobilized Arthrobacter M-4 cells contg. xanthine oxidase has been studied. The oxidn. usually goes fast, except for II (R = Me, MeO) which are oxidized slowly. Small lab.-scale oxidns. were carried out with bacterial cells immobilized in gelatine crosslinked with glutaraldehyde. Based on spectral data the products of the oxidn. reactions are 6- and 7-aryllumazines, e.g. III.  
 IT 113120-63-1P 113120-65-3P 113120-66-4P 113120-77-7P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation) (prepn. and amidation of)  
 RN 113120-63-1 CAPLUS  
 CN Pyrazinecarboxylic acid, 3-amino-6-(4-methylphenyl)-, ethyl ester, 4-oxide (9CI) (CA INDEX NAME)



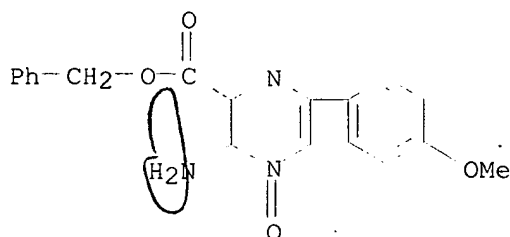
RN 113120-65-3 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-6-(4-methylphenyl)-, phenylmethyl ester, 4-oxide (9CI) (CA INDEX NAME)



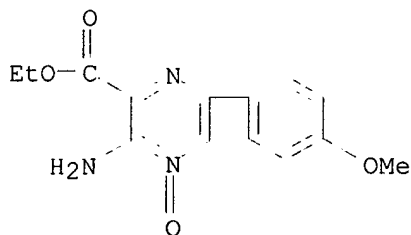
RN 113120-66-4 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-6-(4-methoxyphenyl)-, phenylmethyl ester, 4-oxide (9CI) (CA INDEX NAME)



RN 113120-77-7 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-6-(4-methoxyphenyl)-, ethyl ester, 4-oxide (9CI) (CA INDEX NAME)

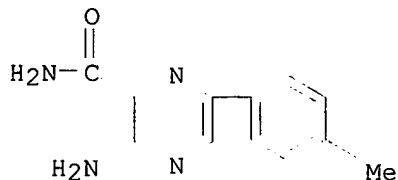


IT 113120-70-0P 113120-71-1P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and cyclization with tri-Et orthoformate)

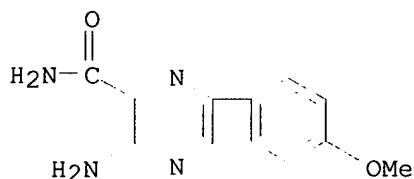
RN 113120-70-0 CAPLUS

CN Pyrazinecarboxamide, 3-amino-6-(4-methylphenyl)- (9CI) (CA INDEX NAME)



RN 113120-71-1 CAPLUS

CN Pyrazinecarboxamide, 3-amino-6-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)

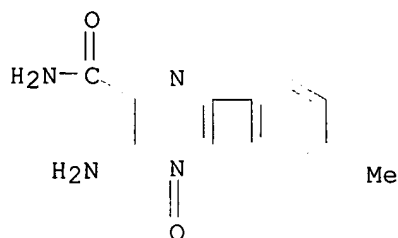


IT 113120-67-5P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

RN 113120-67-5 CAPLUS

CN Pyrazinecarboxamide, 3-amino-6-(4-methylphenyl)-, 4-oxide (9CI) (CA INDEX NAME)



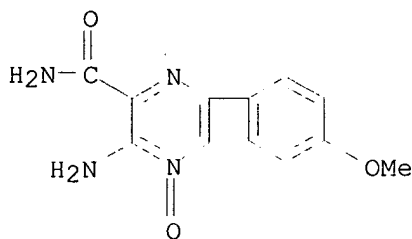
IT 113120-68-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn., redn., and cyclization with tri-Et orthoformate)

RN 113120-68-6 CAPLUS

CN Pyrazinecarboxamide, 3-amino-6-(4-methoxyphenyl)-, 4-oxide (9CI) (CA INDEX NAME)





ANSWER 80 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1986:456291 CAPLUS

DOCUMENT NUMBER: 105:56291

TITLE: Effects of chitin synthesis inhibitors on incorporation of nucleosides into DNA and RNA in a cell line from *Manduca sexta* (L.)

AUTHOR(S): Klitschka, G. E.; Mayer, R. T.; Droleskey, R. E.; Norman, J. O.; Chen, A. C.

CORPORATE SOURCE: Agric. Res. Serv., US Dep. Agric., College Station, TX, 77841, USA

SOURCE: Toxicology (1986), 39(3), 307-15

CODEN: TXCYAC; ISSN: 0300-483X

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Five putative chitin [1398-61-4] synthesis inhibitors (CSI) were tested to det. if they inhibited nucleoside incorporation into TCA-precipitable material in a cell line from *M. sexta*. The results varied. Diflubenzuron (DFB) [35367-38-5] (100 .mu.M) inhibited cytidine [65-46-3] incorporation by 38%; EL-494 [59489-59-7] (100 .mu.M) inhibited adenosine [58-61-7] incorporation by 43%; Bay Sir 8514 [64628-44-0] (100 .mu.M) inhibited uridine [58-96-8] incorporation by 24%. Super diflubenzuron [35367-31-8] (100 .mu.M) was the worst inhibitor overall (18-22%) for the benzoylphenylurea CSI. The triazine CSI, CGA 19255 [26669-42-1], was the best inhibitor tested with 60% inhibition for cytidine and 49% for adenosine incorporation into DNA and RNA. SEM of cells incubated with DFB revealed distinct external morphol. changes. Transmission electron microscopy showed that crystals accumulated in the cytoplasm of the treated cells. The intracellular crystals, induced by or consisting of DFB, and the inhibition of nucleoside incorporation persisted even after DFB was removed from the medium.

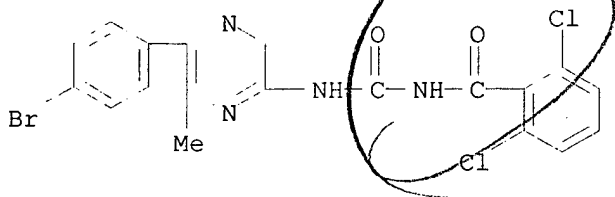
IT 59489-59-7

RL: BIOL (Biological study)

(nucleoside incorporation into DNA and RNA of insect cells response to, chitin formation inhibition in relation to)

RN 59489-59-7 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)



~~124~~ ANSWER 81 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1984:606058 CAPLUS

DOCUMENT NUMBER: 101:206058

TITLE: Joint action of a juvenile hormone analog with benzoylphenylureas ingested by western spruce budworm, *Choristoneura occidentalis* (Lepidoptera: Tortricidae)

AUTHOR(S): Robertson, Jacqueline L.; Smith, Kimberly C.; Granett, Jeffrey; Retnakaran, Arthur

CORPORATE SOURCE: Pac. Southwest For. Range Exp. Stn., U.S. Dep. Agric., Berkeley, CA, 94701, USA

SOURCE: Can. Entomol. (1984), 116(8), 1063-8

CODEN: CAENAF; ISSN: 0008-347X

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Mixts. of the juvenile hormone analog (JHA) methoprene [40596-69-8] and each of 3 benzoylphenylureas (BPUs) were fed to 6th instar western spruce budworm larvae. The BPUs tested were diflubenzuron [35367-38-5], BAY SIR 8514 [64628-44-0], and EL 127063 (N-[[[5-(4-bromophenyl)-6-methyl-2-pyrazinyl]amino]carbonyl]-2-chlorobenzamide) [69816-57-5]. Mixts. consisted of JHA:BPU combined in 1:9 proportions. Ingestion of methoprene combined with BAY SIR 8514 or diflubenzuron resulted in significantly lower mortality than expected under a simple model of uncorrelated, independent action. Ingestion of the mixt. of methoprene and EL-127063, however, resulted in significantly enhanced toxicity over the upper response range (>50% mortality).

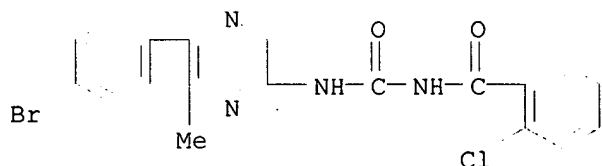
IT 69816-57-5

RL: BIOL (Biological study)

(methoprene interaction with, against Western spruce budworm)

RN 69816-57-5 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)



~~124~~ ANSWER 82 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1984:116316 CAPLUS

DOCUMENT NUMBER: 100:116316

TITLE: Multiresidue analysis of some insect growth regulators by reversed-phase high-performance liquid chromatography

AUTHOR(S): Feng, C. C.; Sundaram, K. M. S.

CORPORATE SOURCE: Can. For. Serv., Environ. Canada, Sault Ste. Marie, ON, P6A 5M7, Can.

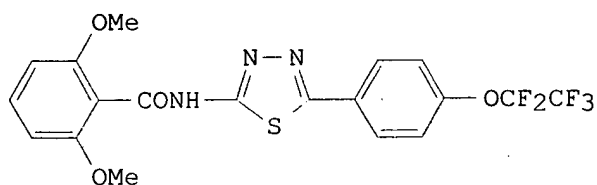
SOURCE: J. Liq. Chromatogr. (1984), 7(1), 95-109

CODEN: JLCHD8; ISSN: 0148-3919

DOCUMENT TYPE: Journal

LANGUAGE: English

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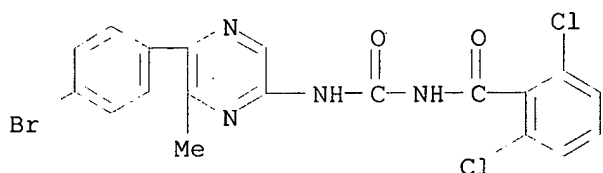
AB Eight insect growth regulators, benzoylurea [614-22-2], PH 60-40 [35367-38-5], PH 60-44 [35367-31-8], Ph 60-43 [75663-37-5], Bay Sir 8514 [64628-44-0], L-1215 (I) [70057-62-4], L-7063 [69816-57-5], and EL-494 [59489-59-7], were analyzed by reversed-phase high-performance liq. chromatog. Best resolu. was obtained by using 2 columns (Hewlett-Packard P-8, 10 .mu.m, 20 cm .times. 4.6 mm internal diam.) connected together and MeOH-H2O as the mobile system. The lowest detectable amt. was 10 ng.

IT 59489-59-7 69816-57-5

RL: ANT (Analyte); ANST (Analytical study)  
(detn. of, by reversed-phase high-performance liq. chromatog.)

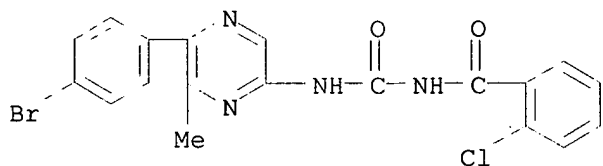
RN 59489-59-7 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)



RN 69816-57-5 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)



24 ANSWER 83 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1983:160359 CAPLUS

DOCUMENT NUMBER: 98:160359

TITLE: A possible generalized cleavage reaction for mono- or disubstituted phenylureas reacted with perfluoroanhydrides

AUTHOR(S): Worobey, B. L.; Webster, G. R. B.

CORPORATE SOURCE: Food Res. Div., Health and Welfare Canada, Ottawa, ON, K1A 0L2, Can.

SOURCE: Int. J. Environ. Anal. Chem. (1983), 14(2), 99-103

CODEN: IJEAA3; ISSN: 0306-7319

DOCUMENT TYPE: Journal

Searched by Barb O'Bryen, STIC 308-4291

LANGUAGE: English

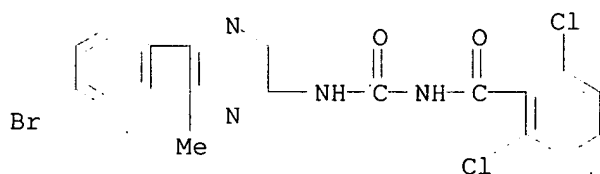
AB Several mono- and di-substituted urea pesticides were treated with (CF<sub>3</sub>CO)<sub>2</sub>O and heptafluorobutyric anhydride to det. if the procedure normally used to derivatize tri-substituted phenylureas yielded cleavage products instead of the derivatized phenylureas. Compds. studied included 4-chlorophenylurea, N-demethoxylinuron, siduron, EL-494, and diflubenuron. All compds. yielded N-perfluoroacylated cleavage products, indicating a generalized cleavage reaction for mono- and di-substituted phenylureas.

IT 59489-59-7

RL: RCT (Reactant)  
(cleavage of, with perfluoroacetic anhydride)

RN 59489-59-7 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)

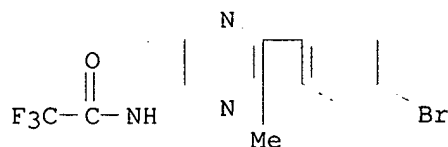


IT 85314-15-4P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

RN 85314-15-4 CAPLUS

CN Acetamide, N-[5-(4-bromophenyl)-6-methylpyrazinyl]-2,2,2-trifluoro- (9CI)  
(CA INDEX NAME)



L24 ANSWER 84 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1984:5477 CAPLUS

DOCUMENT NUMBER: 100:5477

TITLE: Photoreaction of 5-aryl-2,3-dicyanopyrazine in the presence of diethylamine

AUTHOR(S): Hamazaki, Hirohide; Tada, Masaru

CORPORATE SOURCE: Dep. Chem., Waseda Univ., Tokyo, Japan

SOURCE: Rikogaku Kenkyusho Hokoku, Waseda Daigaku (1983),  
(103), 35-8

CODEN: WDRKA6; ISSN: 0372-7181

DOCUMENT TYPE: Journal

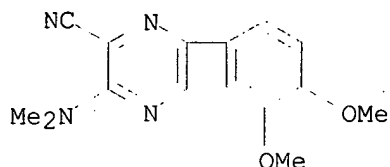
LANGUAGE: English

AB 5-Aryl-3-cyanopyrazine and 5-aryl-3-cyano-2-(diethylamino)pyrazine in which the aryl group is 3,4-dimethoxyphenyl or 4'-(benzo-15-crown-5)-yl, were formed by the photolysis of 5-aryl-2,3-dicyanopyrazine in the presence of Et<sub>2</sub>NH. Addn. of small amt. of a protic solvent to the reaction system, is required to produce the diethylamino-derivs. the role of the protic solvent and the reaction mechanism were discussed.

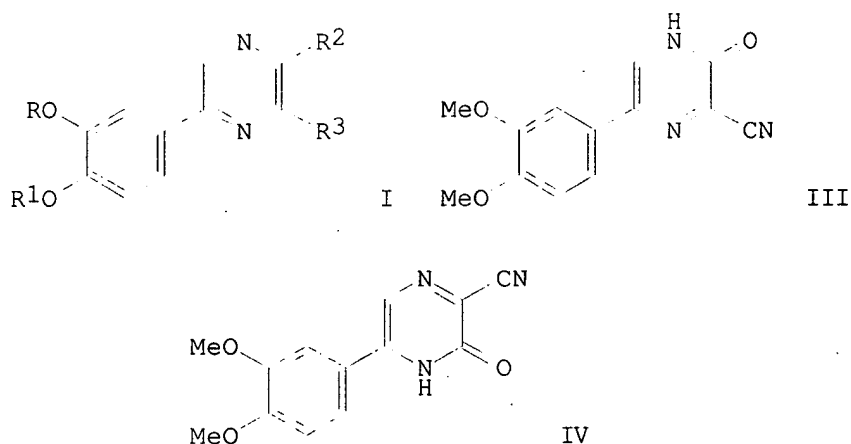
IT 88043-47-4P

RL: SPN (Synthetic preparation); PREP (Preparation)

(prepn. of)  
 RN 88043-47-4 CAPLUS  
 CN Pyrazinecarbonitrile, 6-(3,4-dimethoxyphenyl)-3-(dimethylamino)- (9CI)  
 (CA INDEX NAME)

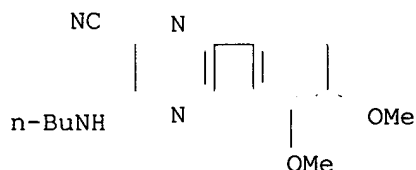


L24 ANSWER 85 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1983:198155 CAPLUS  
 DOCUMENT NUMBER: 98:198155  
 TITLE: The substitution reaction of pyrazine-2,3-dicarbonitrile derivatives with ammonia, amines, water and alcohols  
 AUTHOR(S): Hirano, Hideki; Lee, Rachel; Tada, Masaru  
 CORPORATE SOURCE: Sch. Sci. Eng., Waseda Univ., Tokyo, 160, Japan  
 SOURCE: J. Heterocycl. Chem. (1982), 19(6), 1409-13  
 CODEN: JHTCAD; ISSN: 0022-152X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
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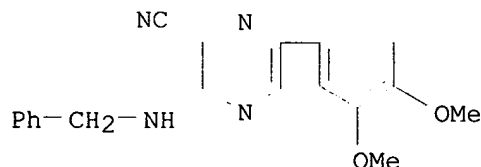


AB Arylpyrazinedicarbonitriles I [R = R1 = Me, RR1 = O(CH2CH2OCH2CH2)2; R2 = R3 = cyano] (II) give alkylaminopyrazinecarbonitriles I (R2 = BuNH, PhCH2NH, R3 = CN; R3 = BuNH, PhCH2NH, R2 = CN) by the substitution reaction with amines but give only 3-aminopyrazine-2-carbonitrile deriv. on reaction with ammonia. The reaction of II with alcs. in the presence of a base gives I (R2 = MeO, PhCH2O, R3 = CN; R3 = MeO, PhCH2O, R2 = CN). The reaction of water gives pyrazinonecarbonitriles III and IV.  
 IT 85575-14-0P 85575-18-4P 85575-28-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)

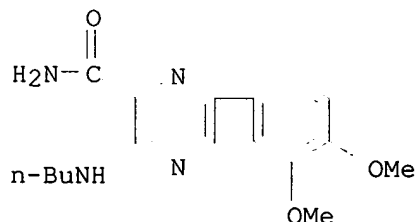
(prepn. of)  
 RN 85575-14-0 CAPLUS  
 CN Pyrazinecarbonitrile, 3-(butylamino)-6-(3,4-dimethoxyphenyl)- (9CI) (CA INDEX NAME)



RN 85575-18-4 CAPLUS  
 CN Pyrazinecarbonitrile, 6-(3,4-dimethoxyphenyl)-3-[(phenylmethyl)amino]- (9CI) (CA INDEX NAME)



RN 85575-28-6 CAPLUS  
 CN Pyrazinecarboxamide, 3-(butylamino)-6-(3,4-dimethoxyphenyl)- (9CI) (CA INDEX NAME)



L24 ANSWER 86 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1982:594567 CAPLUS

DOCUMENT NUMBER: 97:194567

TITLE: Biological impact of contact insecticides and insect growth regulators on isolated stages of the greenhouse whitefly (Homoptera: Aleyrodidae)

AUTHOR(S): Collman, G. L.; All, J. N.

CORPORATE SOURCE: Dep. Entomol., Univ. Georgia, Athens, GA, 30602, USA

SOURCE: J. Econ. Entomol. (1982), 75(5), 863-7

CODEN: JEENAI; ISSN: 0022-0493

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Greenhouse expts. revealed efficacy of 11 insecticides (2 organophosphates, 2 formulations of a synthetic pyrethrin [121-29-9], 2 pyrethroids, 3 juvenile hormone analogs, and 2 molt inhibitors) on an asynchronous population of *Trialeurodes vaporariorum*. To det. the mechanism of chem. control, it was necessary to study the susceptibility of 7 discrete greenhouse whitefly stages to 4 of the insecticides in an

environmental chamber. Permethrin was the most effective toxicant through its broad activity on whitefly life stages. pennacphrin (Microencapsulated resmethrin) [10453-86-8] was effective against 2nd and 3rd instars and had some activity against adults, but it allowed substantial adult emergence after the treatment of eggs, first-stage larvae, or pupae. enstar (Juvenile hormone analog prop-2-ynyl,3,7,11-trimethyl-2,4-ddodecadienoate) [42588-37-4] controlled 2nd, 3rd, and early-pupal instars, but was ineffective on eggs, first-stage larvae, pupae, and adults. Diflubenzuron had no substantial effects on any stage. The nature of the toxicity of permethrin, Pennacphrin, and Enstar was of an immediate toxicity or a toxicity delayed to a subsequent immature stage. No toxicant produced adult sterility or affected longevity or fecundity.

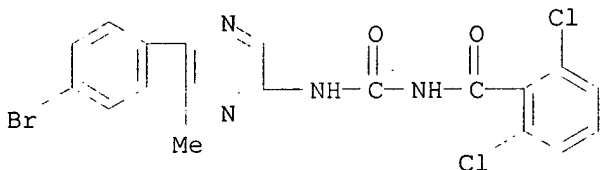
IT 59489-59-7

RL: BIOL (Biological study)

(greenhouse whitefly control by, developmental stage in relation to)

RN 59489-59-7 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)



L24 ANSWER 87 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1982:195049 CAPLUS

DOCUMENT NUMBER: 96:195049

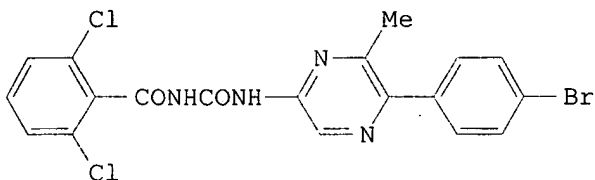
TITLE: Fate of an insect growth regulator EL-494 in soybean callus tissue, soybean plants and gypsy moth larvae  
 AUTHOR(S): AbdelMonem, Abdalla E.; Mumma, Ralph O.  
 CORPORATE SOURCE: Dep. Entomol., Pennsylvania State Univ., University Park, PA, 16802, USA

SOURCE: J. Agric. Food Chem. (1982), 30(3), 536-42  
 CODEN: JAFCAU; ISSN: 0021-8561

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



I

AB The metab. of EL-494 (I) [59489-59-7], a potential insecticide which inhibits chitin synthesis, was investigated in soybean plant, soybean callus tissue, and gypsy moth larvae. Plants were incubated with <sup>14</sup>C-benzoyl-labeled I for 14 days. Callus tissues were incubated with

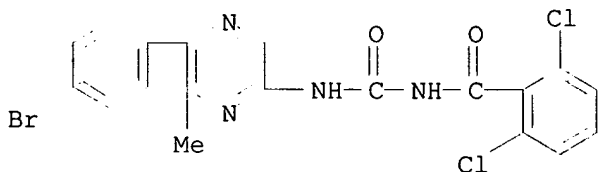
14C-benzoyl- and 14C-2-pyrazinyl-labeled I for varying times (3, 6, 12, and 24 days). Gypsy moth larvae (6th and 6th instars) were incubated with 14C-benzoyl-labeled I for 7 days. Only 2 14C-benzoyl-labeled metabolites were found in the plant tissue or the gypsy moth larvae, and these were 2,6-dichlorobenzamide [2008-58-4] (6.1-16.2% in plant tissue and 5.6-8.3% in gypsy moth larvae) and 2,6-dichlorobenzoic acid [50-30-6] (0.3-2.0% in plant tissue and 0.3% in gypsy moth larvae). 2-amino-5-(4-bromophenyl)-6-methylpyrazine [59489-75-7] Was the only 14C-pyrazinyl-labeled metabolite of I found in the plant exts. The metabolic degrdn. products generated by the soybean callus tissue were qual. and quant. similar to those of whole plants. Gypsy moth larvae eliminated 27-31% of the [14C]EL-494 by excretion.

IT 59489-59-7

RL: BPR (Biological process); BIOL (Biological study); PROC (Process) (metab. of, in plants and gypsy moth larvae)

RN 59489-59-7 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)

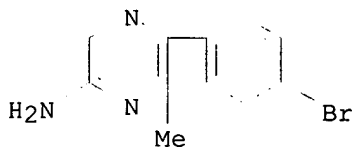


IT 59489-75-7

RL: BIOL (Biological study) (metabolite, of EL-494 insect growth regulator in plant tissues)

RN 59489-75-7 CAPLUS

CN Pyrazinamine, 5-(4-bromophenyl)-6-methyl- (9CI) (CA INDEX NAME)



L24 ANSWER 88 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1982:594535 CAPLUS

DOCUMENT NUMBER: 97:194535

TITLE: Toxicity of experimental molt inhibitors to western spruce budworm

AUTHOR(S): Robertson, Jacqueline L.

CORPORATE SOURCE: Forest Serv., USDA, Berkeley, CA, 94701, USA

SOURCE: J. Ga. Entomol. Soc. (1982), 17(3), 413-16

CODEN: GENSAB; ISSN: 0016-8238

DOCUMENT TYPE: Journal

LANGUAGE: English

AB In a series of diet-incorporation bioassays, 8 exptl. molt inhibitors were tested to det. their relative toxicities to 6th instar western spruce budworm, Choristoneura occidentalis. Comparison of LC50 values indicated that the decreasing order of effectiveness was EL-127063 [69816-57-5], TH-6044 [83590-05-0] and UC-62644 [81210-22-2], EL-131215 [70057-62-4], TH-6043 [83590-04-9], TH-6045 [83590-06-1], GCP-6788 [83589-60-0], and GCP-7106 [83589-61-1]. Three off the molt



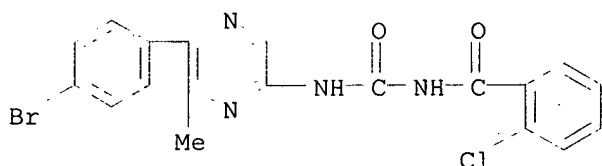
inhibitors, TH-6043, TH-6045, and GCP-6788, were also fed to 3rd instars. Only GCP-6788 was more toxic when exposure began in the 3rd instar compared to ingestion by 6th instars.

IT 69816-57-5

RL: PRP (Properties)  
(toxicity of, to western spruce budworm)

RN 69816-57-5 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)



L24 ANSWER 89 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1982:16055 CAPLUS

DOCUMENT NUMBER: 96:16055

TITLE: Toxicity, mode of action, analytical technique, and metabolism of a new molt inhibitor (EL-494)

AUTHOR(S): AbdelMonem, Abdalla ElHussein

CORPORATE SOURCE: Pennsylvania State Univ., University Park, PA, USA

SOURCE: (1981) 105 pp. Avail.: Univ. Microfilms Int., Order No. 8120395

From: Diss. Abstr. Int. B 1981, 42(4), 1302

DOCUMENT TYPE: Dissertation

LANGUAGE: English

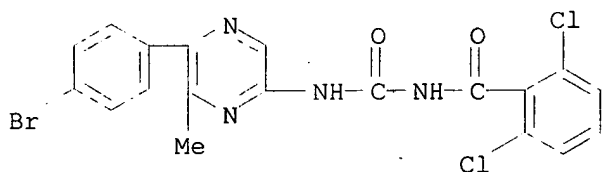
AB Unavailable

IT 59489-59-7

RL: BIOL (Biological study)  
(insect ecdysis inhibitor)

RN 59489-59-7 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)



L24 ANSWER 90 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1982:176090 CAPLUS

DOCUMENT NUMBER: 96:176090

TITLE: Toxicology and efficacy of insect growth regulators aerially applied against the spruce budworm at Hearst (1978), Wawa (1979), and the French River area (1980)

AUTHOR(S): Retnakaran, Arthur

CORPORATE SOURCE: For. Pest Manage. Inst., Sault Ste., ON, Can.

SOURCE: Rep. FPM-X - For. Pest Manage. Inst. (1981), FPM-X-45, 70 pp.

CODEN: RFFID4; ISSN: 0704-772X

DOCUMENT TYPE: Report  
 LANGUAGE: English

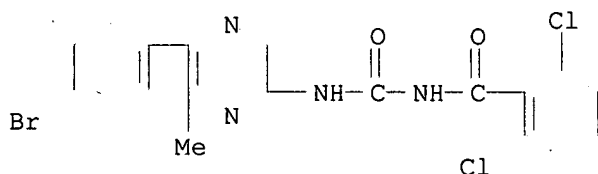
AB During 1978 to 1980, 5 different exptl. molt inhibiting insect growth regulators, i.e. EL-494 [59489-59-7], L-1215 [70057-62-4], L-7063 [69816-57-5]; BAY SIR-8514 [64628-44-0], and UC-62644 [81210-22-2] were studied in the lab. and in the greenhouse. The most active material was UC-62644 followed by BAY SIR-8514. The other 3 compds. were not very effective. UC-62644 manifested its effects within 48 h, whereas the others took >1 wk. Greenhouse trials showed similar patterns of activity. Field trials were conducted in 1978 near Hearst, Ontario, with EL-494 and BAY SIR-8514, with Dimilin [35367-38-5] (pH 60-40) and, Matacil [2032-59-9] as pos. controls. EL-494 showed disappointing results but BAY SIR-8514 appeared promising. Even at a high dosage (4 oz/acre or 280 g/ha) Dimilin was ineffective, confirming its poor activity against the budworm found in previous years. Field trails were conducted in 1979 near Wawa, Ontario, with several levels of BAY SIR-8514 and using Matacil as a pos. control. At the higher 2 levels (3 and 4 oz/acre or 210 and 280 g/ha) its activity in terms of population redn. was similar to that of Matacil. Because of its slow activity (>1 wk.) foliage protection was less than that obtained for Matacil. Field trials were conducted in 1980 in the French River area with BAY SIR-8514 and UC-62644, using Matacil and Dipel 88 as pos. controls. For the first time, oil formulations of the wettable powder were tested. The deposit obtained with oil formulations was far better than that with water. Even at very low dosage levels (1 and 0.5 oz/acre or 70 and 35 g/ha) UC-62644 was comparable to Matacil for both population redn. and foliage protection. BAY SIR-8514 was better than most of the materials tested earlier, but was not as good as UC-62644. A spray system taking into account the vol./area (US gal/acre or L/ha) provided a reasonable dosage range for field trials. Field equiv., i.e., oz in 0.5 US gal per acre or g 4.7 L/ha, were tested in the spray tower and the min. dose required for 100% control was detd. Since the conditions in the spray tower were close to ideal, unlike those in the field, this dosage was multiplied by a factor of 10 for field trails.

IT 59489-59-7 69816-57-5

RL: BIOL (Biological study)  
 (spruce budworm response to, in aerial application)

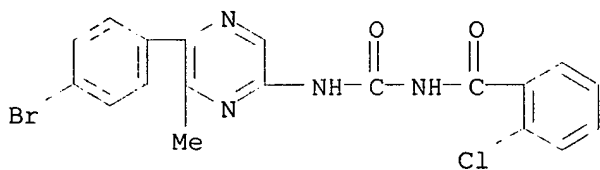
RN 59489-59-7 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)

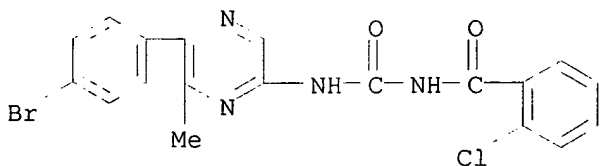


RN 69816-57-5 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)



L24 ANSWER 91 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1982:64161 CAPLUS  
 DOCUMENT NUMBER: 96:64161  
 TITLE: Biological activities of two new substituted benzamides against mosquitoes and nontarget organisms  
 AUTHOR(S): Schaefer, C. H.; Miura, T.; Wilder, W. H.  
 CORPORATE SOURCE: Mosquito Control Res. Lab., Univ. California, Fresno, CA, 93727, USA  
 SOURCE: J. Econ. Entomol. (1981), 74(6), 658-61  
 CODEN: JEENAI; ISSN: 0022-0493  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB L-7063 (N-((5-(4-Bromophenyl)-6 methyl-pyrazinyl)amino)carbonyl)-2-chlorobenzamide) [69816-57-5] and L-1215 ((2,6-dimethoxy-N-(5-(4-(pentafluoroethoxy)phenyl)-1,3,4-thiadiazol-2-yl)benzamide) [70057-62-4] both showed a high degree of biol. activity against mosquito larvae. However, an organophosphorous-resistant strain of *Culex quinquefasciatus* showed possible tolerance to L-7063; pressuring this strain with L-7063 led to cross-resistance in 4 generations. This represents the first report of cross-resistance to the benzamide-type structure in mosquitoes. Both L-7063 and L-1215 are relatively safe to nontarget, aquatic organisms; although field applications do cause temporary depressions in cladocerans, the populations quickly recover.  
 IT 69816-57-5  
 RL: BIOL (Biological study)  
 (mosquito control by, toxicity in nontarget organisms and)  
 RN 69816-57-5 CAPLUS  
 CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)



L24 ANSWER 92 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1981:563808 CAPLUS  
 DOCUMENT NUMBER: 95:163808  
 TITLE: Lethal effects of five molt inhibitors fed to the western spruce budworm (*Choristoneura occidentalis* Freeman) (Lepidoptera:Tortricidae) and the Douglas-fir tussock moth (*Orgyia pseudotsugata* [McDonnough]) (Lepidoptera:Lymantriidae)  
 AUTHOR(S): Rappaport, N. G.; Robertson, J. L.  
 CORPORATE SOURCE: Pac. Southwest For. Range Exp. Stn., USDA, Berkeley, CA, 94701, USA

SOURCE: Z. Angew. Entomol. (1981), 91(5), 459-63  
CODEN: ZANEAE; ISSN: 0044-2240

DOCUMENT TYPE: Journal

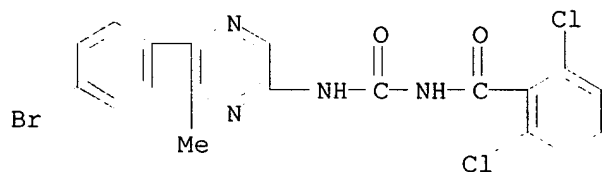
LANGUAGE: English

AB Five insect molt inhibitors (MIs) were mixed with artificial diet and fed to 3rd- and 6th-stage western spruce budworm (*C. occidentalis*) larvae and 2nd stage Douglas-fir tussock moth (*O. pseudotsugata*) larvae. In general, tussock moth larvae were more susceptible than western spruce budworm larvae to these MIs. BAY SIR 6874 [59067-33-3] was by far the most toxic to 3rd- and 6th-stage western spruce budworm, and diflubenzuron [35367-38-5] the least toxic. TH 75331 [79127-55-2] and EL-494 [59489-59-7] both showed substantial activity against this insect, whereas BAY SIR 8514 [64628-44-0] was relatively less active, but was still at least 3 times as toxic as diflubenzuron. Except for EL-494, there were no large differences in toxicity of these compds. to 2nd-stage tussock moth larvae; EL-494 was 30-90 times less toxic than the others at the LC50. The other 4 MIs caused .gtoreq.50% mortality of 2nd-stage tussock moth which were fed a diet contg. <0.1 ppm of the MIs.

IT 59489-59-7  
RL: BIOL (Biological study)  
(western spruce budworm and Douglas fir tussock moth response to)

RN 59489-59-7 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)



L24 ANSWER 93 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1981:169396 CAPLUS

DOCUMENT NUMBER: 94:169396

TITLE: Chitin synthesis inhibiting insect growth regulators do not inhibit chitin synthase

AUTHOR(S): Mayer, R. T.; Chen, A. C.; DeLoach, J. R.

CORPORATE SOURCE: Vet. Toxicol. Entomol. Res. Lab., Agric. Res. Sci. Educ. Adm., College Station, TX, 77841, USA

SOURCE: Experientia (1981), 37(4), 337-8  
CODEN: EXPEAM; ISSN: 0014-4754

DOCUMENT TYPE: Journal

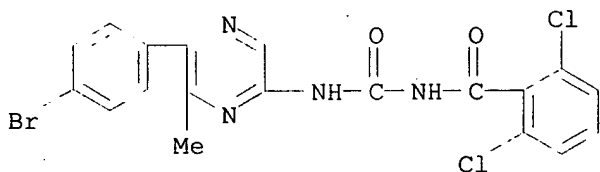
LANGUAGE: English

AB The antibiotic tunicamycin [11089-65-9] as well as the insect growth regulators diflubenzuron [35367-38-5], Bay Sir 6874 [59067-33-3], Bay Sir 8514 [64628-44-0], CGA-19255 [26669-42-1], and Lilly 494 [59489-59-7] did not inhibit chitin synthase [9030-18-6], obtained from 4-day-old *Stomoxys calcitrans* pupae, in vitro. Tunicamycin exhibited no inhibitory effects at >300 .mu.M.

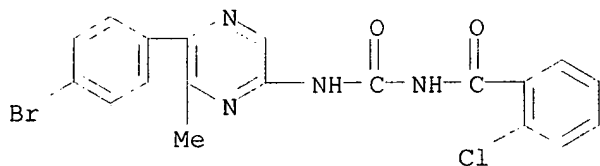
IT 59489-59-7  
RL: BIOL (Biological study)  
(chitin synthase from stable fly pupae response to)

RN 59489-59-7 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)



L24 ANSWER 94 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1982:212513 CAPLUS  
 DOCUMENT NUMBER: 96:212513  
 TITLE: Advances in chemical control of the sciarid fly, *Lycoriella mali*  
 AUTHOR(S): Cantelo, William W.  
 CORPORATE SOURCE: Veg. Lab., Beltsville Agric. Res. Cent., Beltsville, MD, 20705, USA  
 SOURCE: Mushroom Sci. (1981), 11(Pt. 2), 255-64  
 CODEN: MUSCAU; ISSN: 0077-2364  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Incorporation of diazinon [333-41-5] 100 ppm into the compost at time of spawning reduces the fly population by 96%; however, some mushroom strains were very sensitive to diazinon, experiencing wt. redns. of 30% and also delayed growth flushes. Several other chems. were found to provide control equal to or better than diazinon. The chems. and their LD95 values (ppm) were SIR 8514 [64628-44-0] (0.4), chlorpyrifos [2921-88-2] (11.0), Lilly LY-127063 [69816-57-5] (21.2), ethoprop [13194-48-4] (25.1), diflubenzuron [35367-38-5] (49.2), and methoprene [40596-69-8] (146.6). SIR 8514, diflubenzuron, Lilly LY-127063, and chlorpyrifos were found to provide long-lasting control. None proved to be phytotoxic to the mushroom crop.  
 IT **69816-57-5**  
 RL: BIOL (Biological study)  
 (sciarid fly control by, in mushrooms)  
 RN 69816-57-5 CAPLUS  
 CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)



L24 ANSWER 95 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1981:545211 CAPLUS  
 DOCUMENT NUMBER: 95:145211  
 TITLE: Comparative toxicity of some molt-inhibiting insecticides to the gypsy moth  
 AUTHOR(S): Abdelmonem, Abdalla H.; Mumma, Ralph O.  
 CORPORATE SOURCE: Dep. Entomol., Pennsylvania State Univ., University Park, PA, 16802, USA  
 SOURCE: J. Econ. Entomol. (1981), 74(2), 176-9  
 CODEN: JEENAI; ISSN: 0022-0493  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

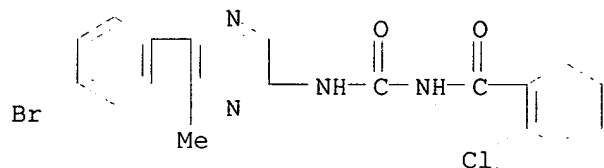
AB The 3rd and 5th larval instars of gypsy moth, *Lymantria dispar*, were fed on treated diet contg. various concns. (0.0-0.8 ppm) of molt-inhibiting insecticides L-7063 (N-[[[5-(4-bromophenyl)-6-methyl-2-pyrazinyl]amino]carbonyl]-2-chlorobenzamide), L-1215 (2,6-dimethoxy-N-[5-[4-(pentafluoroethoxy)-phenyl]-1,3,4-thiadiazol-2-yl]benzamide), and diflubenzuron [35367-38-5] and the larvae were scored for molting abnormalities. EC50 values for L-7063, L-1215, and diflubenzuron for failure of the 3rd instar to molt to the 4th instar were 0.176, 0.513, and 0.052 ppm, and for failure to molt the second time (to the 5th instar) were 0.075, 0.175, and 0.009 ppm, resp. EC50 values for failure of the 5th instar to molt to pupae (male) or to the 6th instar (female) were 0.094, 0.531, and 0.122 ppm, resp. Continuous feeding of 3rd instars until pupal formation on diet contg. L-7063 or diflubenzuron resulted in lower EC50 values of 0.009 and 0.006 ppm, resp. Diflubenzuron was more toxic to the 3rd instar, but L-7063 was most toxic to the 5th instar. The slopes of the probit regression lines varied between compds. and instar treated, which implies variation in mechanism of action or chem. or phys. processes.

IT 69816-57-5

RL: BIOL (Biological study)  
(gypsy moth molting response to)

RN 69816-57-5 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)



L24 ANSWER 96 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1981:59622 CAPLUS

DOCUMENT NUMBER: 94:59622

TITLE: Development of an analytical procedure for an insect growth regulator (EL-494) employing high-pressure liquid chromatography and its application on residues in alfalfa

AUTHOR(S): Abdel Monem, Abdalla H.; Mumma, Ralph O.

CORPORATE SOURCE: Dep. Entomol., Pennsylvania State Univ., University Park, PA, 16802, USA

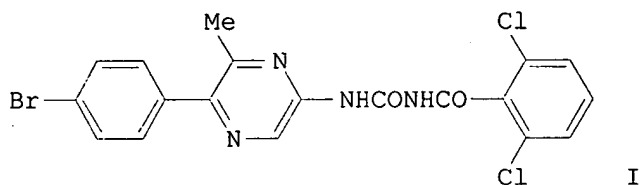
SOURCE: J. Agric. Food Chem. (1981), 29(1), 75-8

CODEN: JAFCAU; ISSN: 0021-8561

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



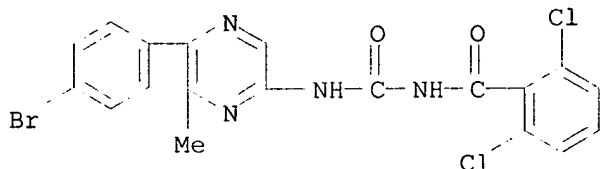
AB A procedure was developed for the anal. of the insect growth regulator EL-494 (I) [59489-59-7] employing high-pressure liq. chromatog. (HPLC). The plant tissue was washed and extd. with acetone, the ext. concd. and cleaned up by using a Florisil column. The concd. eluate was analyzed by HPLC, employing a .mu.Bondapak C18 column and a MeOH-water solvent system. I was detected by UV adsorption, and the lower limit of detection was 10 ng. For demonstration of the practical application of this procedure, samples of alfalfa, field treated with a 50% wettable powder formulation of I at three concns. (283.5, 567.0, and 1134.0 g), were analyzed over a 9-wk period. Recoveries of spiked samples varied from 94.9 to 96.2% I (from 50 to 5000 ng), with a lower limit of detection of 0.025 ppm.

IT 59489-59-7

RL: ANT (Analyte); ANST (Analytical study)  
(detn. of, by high-pressure liq. chromatog.)

RN 59489-59-7 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)



L24 ANSWER 97 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1981:203789 CAPLUS

DOCUMENT NUMBER: 94:203789

TITLE: Stability of three ureide insect chitin-synthesis inhibitors in mushroom compost determined by chemical and bioassay techniques

AUTHOR(S): Argauer, Robert J.; Cantelo, William W.

CORPORATE SOURCE: Hortic. Sci. Inst., USDA, Beltsville, MD, 20705, USA

SOURCE: J. Econ. Entomol. (1980), 73(5), 671-4

CODEN: JEENAI; ISSN: 0022-0493

DOCUMENT TYPE: Journal

LANGUAGE: English

AB In tests conducted to det. the stability of selected insecticides in compost used to grow mushrooms, 3 ureide insecticides, diflubenzuron (N-[[[4-(4-chlorophenyl)amino]carbonyl]-2,6-difluorobenzamide] [35367-38-5], BAY SIR 8514 (2-chloro-N-[[[4-(trifluoromethoxyphenyl)amino]carbonyl]benzamide] [64628-44-0], and Lilly 7063 (N-[[[5-(4-bromophenyl)-6-methyl-2-pyrazinyl]amino]carbonyl]-2-chlorobenzamide) [69816-57-5], were much more stable than the phosphorus-contg. insecticides diazinon [333-41-5], ethoprop [13194-48-4], and chlorpyrifos [2921-88-2], although chlorpyrifos provided .ltoreq.80% fly control for 6 wk. Residues

were assayed by means of both an established bioassay with a sciarid fly, *Lycoriella mali*, and with a newly developed chem. method based on high-performance liq. chromatog.

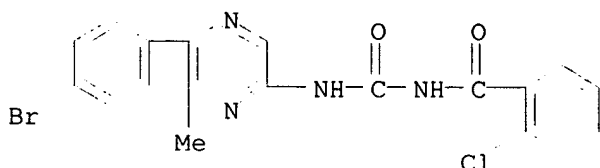
IT 69816-57-5

RL: PRP (Properties)

(stability of, in mushroom compost)

RN 69816-57-5 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)



L24 ANSWER 98 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1980:599166 CAPLUS

DOCUMENT NUMBER: 93:199166

TITLE: Susceptibility of stored product insects to chitin inhibitors LY-131215 and LY-127063

AUTHOR(S): Kramer, Karl J.; McGregor, Harrison E.

CORPORATE SOURCE: Sci. Educ. Adm., U. S. Grain Mark. Res. Lab., Manhattan, KS, 66502, USA

SOURCE: J. Kans. Entomol. Soc. (1980), 53(3), 627-30

CODEN: JKESA7; ISSN: 0022-8567

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Two chitin [1398-61-4] inhibiting compds. were tested against several species of stored product insects. LY-127063 (N-[[[5-(4-bromophenyl)-6-methyl-2-pyrazinyl]amino]carbonyl]-2-chlorobenzamide [69816-57-5] was effective in preventing development of the lesser grain borer *Rhyzopertha dominica*, confused flour beetle, *Tribolium confusum*, sawtoothed grain beetle, *Oryzaephilus surinamensis*, Indian meal moth, *Plodia interpunctella*, rice weevil, *Sitophilus oryzae*, almond moth, *Ephestia cautella*, and Angoumois grain moth, *Sitotroga cerealella* at 0.2-13.5 ppm in wheat. LY-131215 [2,6-dimethoxy-N-[5-(4-(2,2,3,3,3-pentafluoroethoxy)phenyl)-1,3,4-thiadiazol-2-yl]benzamide] [70057-62-4] was only about 1/5 as effective.

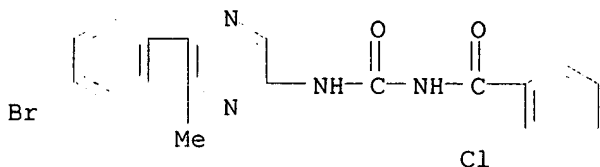
IT 69816-57-5

RL: BIOL (Biological study)

(as chitin inhibitor, insects in response to)

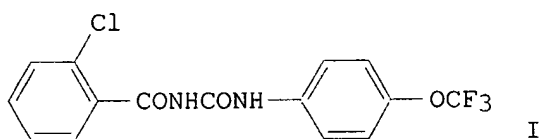
RN 69816-57-5 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)





L24 ANSWER 99 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1981:151818 CAPLUS  
 DOCUMENT NUMBER: 94:151818  
 TITLE: Effect of 3 new molt-inhibiting insect growth regulators on the spruce budworm  
 AUTHOR(S): Retnakaran, Arthur  
 CORPORATE SOURCE: Canadian For. Serv., Forest Pest Manag. Inst., Sault Ste. Marie, ON, P6A 5M7, Can.  
 SOURCE: J. Econ. Entomol. (1980), 73(4), 520-4  
 CODEN: JEENAI; ISSN: 0022-0493  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI



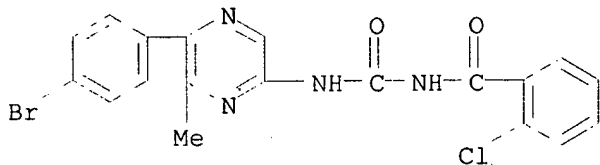
AB BAY SIR 8514 (I) [64628-44-0], LY-127063 (N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2-chlorobenzamide) [69816-57-5], and LY-131215 (2,6-dimethoxy-N-[5-[4-(pentafluoroethoxy)phenyl]-1,3,4-thiadiazol-2-yl]benzamide) [70057-62-4] were tested in the lab. and in the greenhouse against *Choristoneura fumiferana*. In addn., I was tested in the field. The EC50 ranged from 0.05 to 0.14 ppm in diet tests and the compds. were stable to autoclaving and UV-exposure from a sun lamp. Greenhouse tests indicated that the equiv. of 35 g in 4.7 L/ha gave 95% control for I, 98% for LY-127063 and 83% for LY-131215. Exptl. aerial application of I showed that at .gtoreq.210 g/ha, the level of control achieved was similar to that of aminocarb at 70 or 70 + 70 g/ha.

IT 69816-57-5

RL: BIOL (Biological study)  
 (spruce budworm control by)

RN 69816-57-5 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)



L24 ANSWER 100 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1980:514448 CAPLUS

DOCUMENT NUMBER: 93:114448

TITLE: A new synthesis of Watasenia preluciferin by cyclization of 2-amino-3-benzyl-5-(p-hydroxyphenyl)pyrazine with p-hydroxyphenylpyruvic acid

AUTHOR(S): Inoue, Shoji; Okada, Kunisuke; Tanino, Hideo; Kakoi,

CORPORATE SOURCE: Hisae  
 SOURCE: Fac. Pharm., Meijo Univ., Nagoya, 468, Japan  
 Chem. Lett. (1980), (3), 299-300  
 CODEN: CMLTAG; ISSN: 0366-7022  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

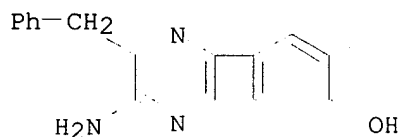
AB Pyrazine I and 4-HOC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>COCO<sub>2</sub>H (II) in Me<sub>3</sub>COH-dioxane heated at 140.degree. for 25 min. gave 49% Watasenia preluciferin (III) and 8.4% IV; whereas I and II in pyridine heated at 80.degree. for 5 h. gave 49% V, which was converted to IV by the action of a dehydrating agent, e. g., Ac<sub>2</sub>O.

IT 37156-84-6

RL: RCT (Reactant)  
 (cyclocondensation of, with hydroxyphenylpyruvic acid)

RN 37156-84-6 CAPLUS

CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)

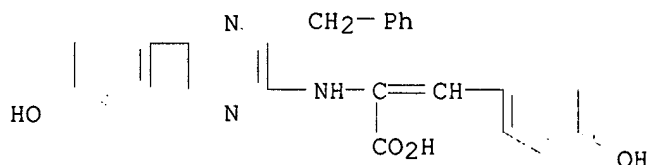


IT 74637-92-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and cyclization of)

RN 74637-92-6 CAPLUS

CN 2-Propenoic acid, 3-(4-hydroxyphenyl)-2-[[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]amino]- (9CI) (CA INDEX NAME)

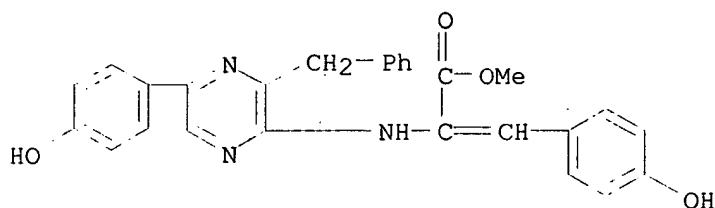


IT 74637-93-7P

RL: PREP (Preparation)  
 (Watasenia scintillans, preluciferin of, synthesis of)

RN 74637-93-7 CAPLUS

CN 2-Propenoic acid, 3-(4-hydroxyphenyl)-2-[[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]amino]-, methyl ester (9CI) (CA INDEX NAME)



L24 ANSWER 101 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1980:158815 CAPLUS

DOCUMENT NUMBER: 92:158815

TITLE: Utilization of imaginal tissues from pupae of the stable fly for the study of chitin synthesis and screening of chitin synthesis inhibitors

AUTHOR(S): Mayer, Richard T.; Meola, Shirlee M.; Coppage, David L.; DeLoach, John R.

CORPORATE SOURCE: Vet. Toxicol. Entomol. Res. Lab., Sci. Educ. Adm., College Station, TX, 77840, USA

SOURCE: J. Econ. Entomol. (1980), 73(1), 76-80

CODEN: JEENAI; ISSN: 0022-0493

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Imaginal epidermal tissues from 4-day-old pupae of *Stomoxys calcitrans* were used to develop an assay suitable for studying chitin [1398-61-4] synthesis and for screening chitin synthesis inhibitors. Four chitin precursors, D-glucose [50-99-7], D-glucosamine [3416-24-8], D-fructose [57-48-7], and NAGA (N-acetyl-D-glucosamine) [7512-17-6] were suitable substrates. All these substrates were incorporated into chitin. Max. incorporation occurred with 8 h or less. The apparent I50's of diflubenzuron [35367-38-5], Bay Sir 8514 (2-chloro-N-[[[4-(trifluoromethoxy)phenyl]amino]carbonyl]benzamide) [64628-44-0], EL-494 (N-[[[5-(4-bromophenyl)-6-methyl-2-pyrazinyl]amino]carbonyl]-2,6-dichlorobenzamide) [59489-59-7], and polyoxin D [22976-86-9] for inhibition of NAGA incorporation were found to be 52, 440, 8,600, and 13,000 nM, resp.

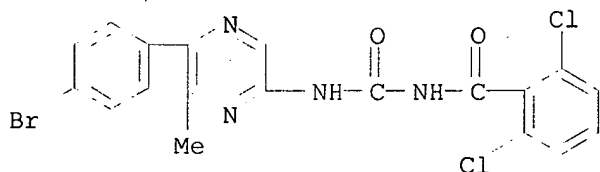
IT 59489-59-7

RL: BIOL (Biological study)

(chitin synthesis inhibition by, bioassay for, using stable fly imaginal tissue)

RN 59489-59-7 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)



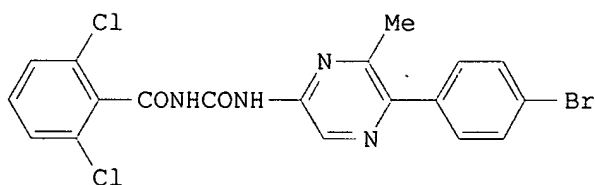
L24 ANSWER 102 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1980:175717 CAPLUS

DOCUMENT NUMBER: 92:175717

TITLE: Toxicological studies on the molt inhibiting insecticide (EL-494) against the gypsy moth and effect

on chitin biosynthesis  
 AUTHOR(S): Abdel-Monem, Abdalla H.; Cameron, E. Alan; Mumma, Ralph O.  
 CORPORATE SOURCE: Dep. Entomol., Pennsylvania State Univ., University Park, PA, 16802, USA  
 SOURCE: J. Econ. Entomol. (1980), 73(1), 22-5  
 CODEN: JEENAI; ISSN: 0022-0493  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI

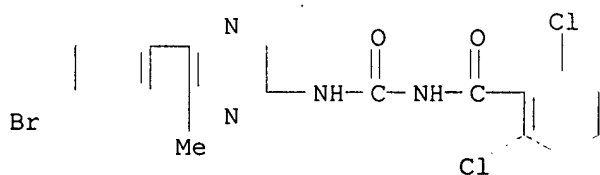


AB All larval instars of *Lymantria dispar* were fed on treated diet contg. 13 different concns. varying from 0.0 to 2.0 ppm of EL-494 (I) [59489-59-7], and the larvae were scored for molting abnormalities. EC50 values of I for failure to molt the 1st time were 0.39-0.88 ppm and for failure to molt a 2nd time were 0.13-0.43 ppm. The 5th and 6th instars were the most susceptible while the 1st and 2nd instars were the least susceptible. Adult emergence, esp. of females, was reduced by continuous feeding on concns. of I that did not affect the 1st and 2nd molt. The incorporation of glucose-14C into chitin [1398-61-4] was reduced 77% relative to controls when larvae were fed on diets contg. 20 ppm I.

IT 59489-59-7  
 RL: BIOL (Biological study)  
 (chitin formation inhibition by, in gypsy moth)

RN 59489-59-7 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)

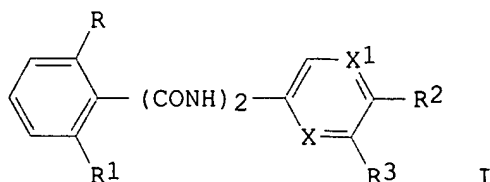


L24 ANSWER 103 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1979:152238 CAPLUS  
 DOCUMENT NUMBER: 90:152238  
 TITLE: 1-(Mono-o-substituted benzoyl)-3-(substituted pyrazinyl)ureas  
 INVENTOR(S): Miesel, John Louis; Abdulla, Riaz Fazal; Terando, Norman Henry  
 PATENT ASSIGNEE(S): Lilly, Eli, and Co., USA  
 SOURCE: Ger. Offen., 86 pp.

DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2826893	A1	19790118	DE 1978-2826893	19780619
US 4133956	A	19790109	US 1977-819639	19770727
IL 54928	A1	19820228	IL 1978-54928	19780615
IL 64263	A1	19820930	IL 1978-64263	19780615
FR 2398738	A1	19790223	FR 1978-18187	19780616
FR 2398738	B1	19810508		
IN 149912	A	19820529	IN 1978-CA666	19780616
BE 868228	A1	19781219	BE 1978-8936	19780619
GB 2001053	A	19790124	GB 1978-27260	19780619
GB 2001053	B2	19820526		
AU 516505	B2	19810604	AU 1978-37249	19780619
AU 7837249	A1	19800103		
GB 2066806	A	19810715	GB 1980-19107	19780619
GB 2066806	B2	19820818		
AT 7804456	A	19811015	AT 1978-4456	19780619
AT 367046	B	19820525		
CA 1129861	A1	19820817	CA 1978-305703	19780619
HU 23227	O	19820830	HU 1978-EI793	19780620
HU 180726	B	19830429		
RO 78069	P	19830803	RO 1978-94410	19780620
HU 29287	O	19840130	HU 1982-1470	19780620
HU 185336	B	19850128		
DK 7802793	A	19781223	DK 1978-2793	19780621
SE 7807127	A	19781223	SE 1978-7127	19780621
NL 7806678	A	19781228	NL 1978-6678	19780621
BR 7803939	A	19790220	BR 1978-3939	19780621
ZA 7803553	A	19800227	ZA 1978-3553	19780621
CS 198104	P	19800530	CS 1978-4095	19780621
CS 198105	P	19800530	CS 1978-8519	19780621
CS 198106	P	19800530	CS 1978-8520	19780621
SU 799662	D	19810123	SU 1978-2628947	19780621
CH 638500	A	19830930	CH 1978-6770	19780621
JP 54009288	A2	19790124	JP 1978-76343	19780622
ES 471057	A1	19800116	ES 1978-471057	19780622
DD 141831	C	19800521	DD 1978-206203	19780622
DD 143721	C	19800910	DD 1978-213690	19780622
PL 115711	B1	19810430	PL 1978-207831	19780622
ES 471879	A1	19790201	ES 1978-471879	19780719
CA 1103251	A1	19810616	CA 1978-308083	19780725
FR 2398739	A1	19790223	FR 1978-32550	19781117
FR 2398739	B1	19821105		
IL 64216	A1	19821231	IL 1979-64216	19790615
AT 8101716	A	19820415	AT 1981-1716	19810415
DK 8103054	A	19810709	DK 1981-3054	19810709
SE 8303206	A	19830607	SE 1983-3206	19830607
PRIORITY APPLN. INFO.:			GB 1977-26093	19770622
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GI



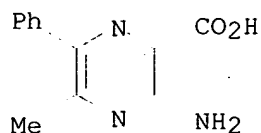
AB The insecticidal compds. I [R = halogen, Me, CF<sub>3</sub>; R<sub>1</sub> = H, halogen, Me, CF<sub>3</sub>; R<sub>2</sub> = H, C1-6 alkyl, haloalkyl, CN, (substituted) phenylalkyl, PhO, PhS; R<sub>3</sub> = H, Me, CN, halogen, haloalkyl; R<sub>2</sub>R<sub>3</sub> = CH:CHCH:CH; X, X<sub>1</sub> = CH, N] were prepd. Thus, 2-amino-5-(4-bromophenyl)-6-methylpyrazine reacted with 2-ClC<sub>6</sub>H<sub>4</sub>CONCO to give I (R = Cl, R<sub>1</sub> = H, R<sub>2</sub> = 4-BrC<sub>6</sub>H<sub>4</sub>, R<sub>3</sub> = Me, X = X<sub>1</sub> = N), which at 5 ppm gave 100% kill of Spodoptera eridamia larvae.

IT 5284-16-2P 69816-43-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and decarboxylation of)

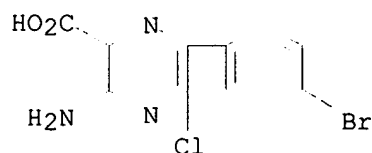
RN 5284-16-2 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-5-methyl-6-phenyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 69816-43-9 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-6-(4-bromophenyl)-5-chloro- (9CI) (CA INDEX NAME)

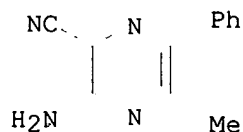


IT 59489-35-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and hydrolysis of)

RN 59489-35-9 CAPLUS

CN Pyrazinecarbonitrile, 3-amino-5-methyl-6-phenyl- (9CI) (CA INDEX NAME)



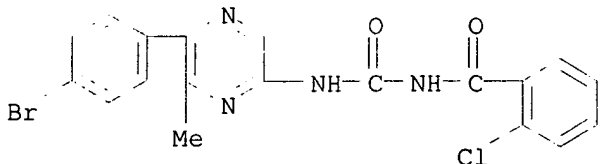
IT 69816-57-5P 69816-60-0P 69816-61-1P  
69816-62-2P 69816-65-5P 69816-66-6P  
69816-67-7P 69816-69-9P 69816-70-2P

69816-71-3P 69816-72-4P 69816-73-5P  
 69816-74-6P 69816-75-7P 69816-76-8P  
 69816-77-9P 69816-78-0P 69816-79-1P  
 69816-80-4P 69816-81-5P 69816-83-7P

RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)  
 (prepn. and insecticidal activity of)

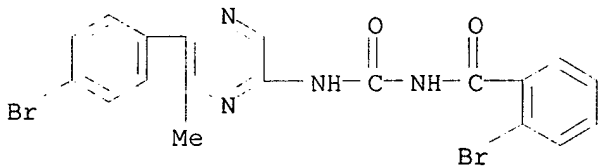
RN 69816-57-5 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)



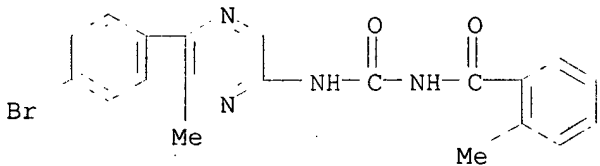
RN 69816-60-0 CAPLUS

CN Benzamide, 2-bromo-N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



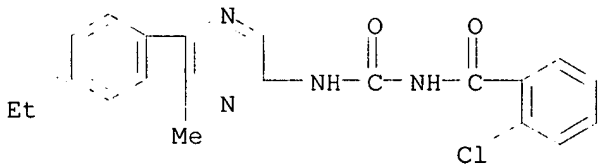
RN 69816-61-1 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2-methyl- (9CI) (CA INDEX NAME)



RN 69816-62-2 CAPLUS

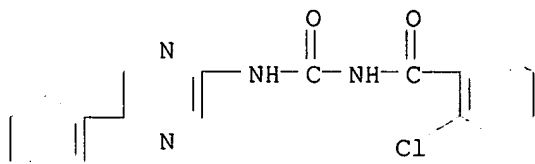
CN Benzamide, 2-chloro-N-[[[5-(4-ethylphenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



RN 69816-65-5 CAPLUS

CN Benzamide, 2-chloro-N-[[[5-(4-methylphenyl)pyrazinyl]amino]carbonyl]-

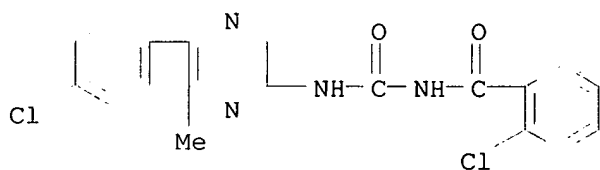
(9CI) (CA INDEX NAME)



Me

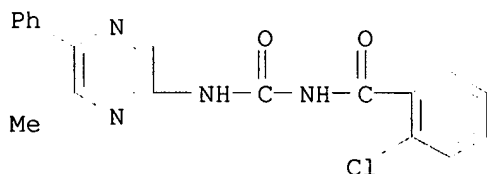
RN 69816-66-6 CAPLUS

CN Benzamide, 2-chloro-N-[[[5-(4-chlorophenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



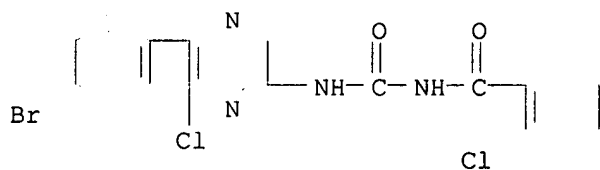
RN 69816-67-7 CAPLUS

CN Benzamide, 2-chloro-N-[[[6-methyl-5-phenylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



RN 69816-69-9 CAPLUS

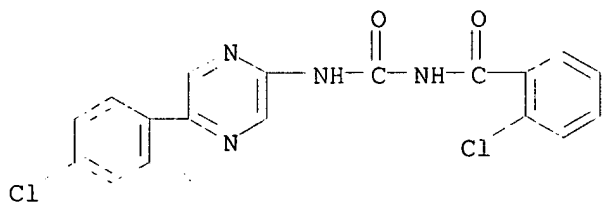
CN Benzamide, N-[[[5-(4-bromophenyl)-6-chloropyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)



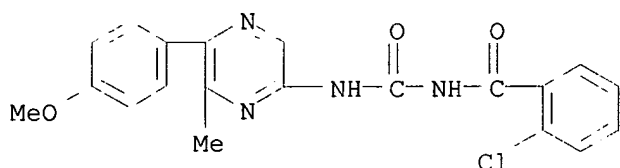
RN 69816-70-2 CAPLUS

CN Benzamide, 2-chloro-N-[[[5-(4-chlorophenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)

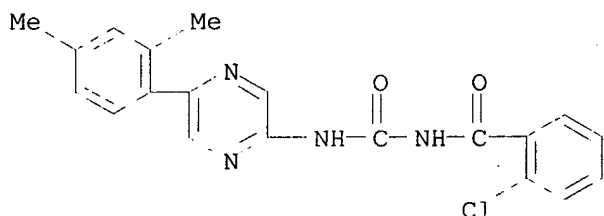




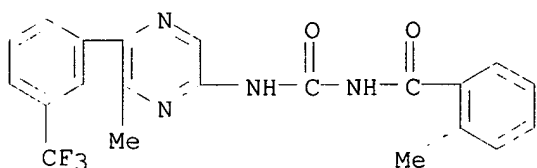
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 CN Benzamide, 2-chloro-N-[[[5-(4-methoxyphenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



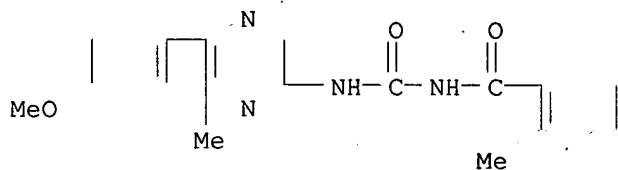
RN 69816-72-4 CAPLUS  
 CN Benzamide, 2-chloro-N-[[[5-(2,4-dimethylphenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



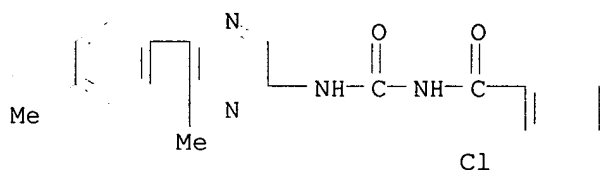
RN 69816-73-5 CAPLUS  
 CN Benzamide, 2-methyl-N-[[[6-methyl-5-[3-(trifluoromethyl)phenyl]pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



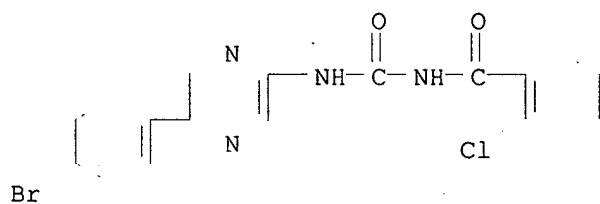
RN 69816-74-6 CAPLUS  
 CN Benzamide, N-[[[5-(4-methoxyphenyl)-6-methylpyrazinyl]amino]carbonyl]-2-methyl- (9CI) (CA INDEX NAME)



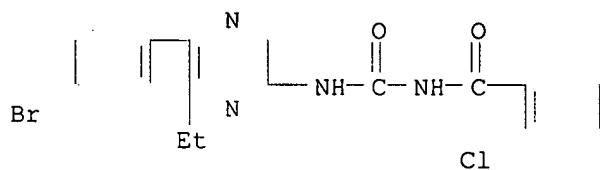
RN 69816-75-7 CAPLUS  
 CN Benzamide, 2-chloro-N-[[[6-methyl-5-(4-methylphenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



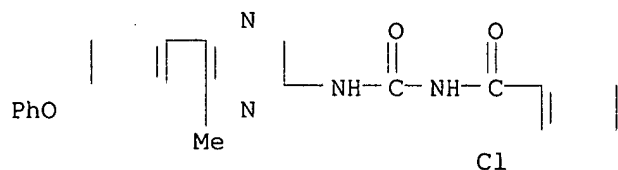
RN 69816-76-8 CAPLUS  
 CN Benzamide, N-[[[5-(4-bromophenyl)pyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)



RN 69816-77-9 CAPLUS  
 CN Benzamide, N-[[[5-(4-bromophenyl)-6-ethylpyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)

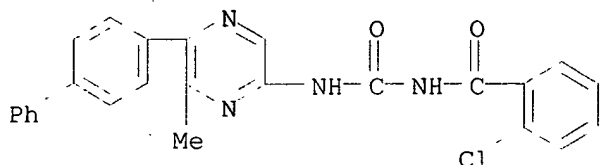


RN 69816-78-0 CAPLUS  
 CN Benzamide, 2-chloro-N-[[[6-methyl-5-(4-phenoxyphenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



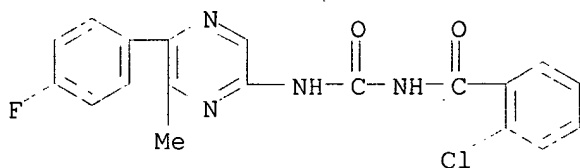
RN 69816-79-1 CAPLUS

CN Benzamide, N-[[[5-[1,1'-biphenyl]-4-yl-6-methylpyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)



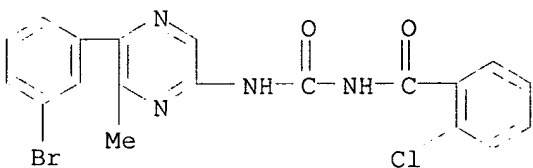
RN 69816-80-4 CAPLUS

CN Benzamide, 2-chloro-N-[[[5-(4-fluorophenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



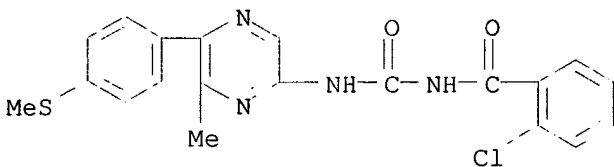
RN 69816-81-5 CAPLUS

CN Benzamide, N-[[[5-(3-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)



RN 69816-83-7 CAPLUS

CN Benzamide, 2-chloro-N-[[[6-methyl-5-[4-(methylthio)phenyl]pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)

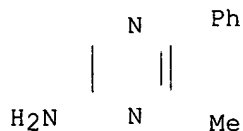


IT 59489-36-0P 69816-39-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and reaction of, with benzoyl isocyanate)

RN 59489-36-0 CAPLUS

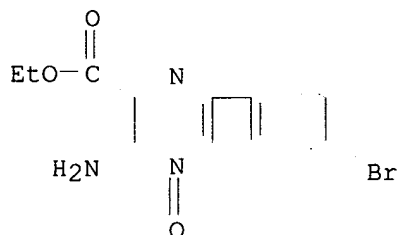
CN Pyrazinamine, 6-methyl-5-phenyl- (9CI) (CA INDEX NAME)



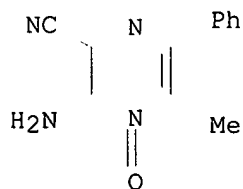
RN 69816-39-3 CAPLUS  
 CN Pyrazinamine, 5-phenyl-6-(trifluoromethyl)- (9CI) (CA INDEX NAME)



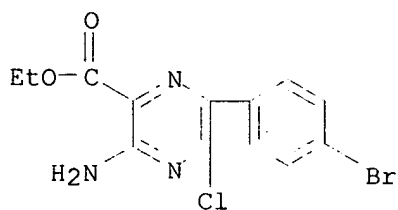
IT 69816-40-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and reaction of, with phosphorus oxychloride).  
 RN 69816-40-6 CAPLUS  
 CN Pyrazinecarboxylic acid, 3-amino-6-(4-bromophenyl)-, ethyl ester, 4-oxide  
 (9CI) (CA INDEX NAME)



IT 59489-34-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and redn. of)  
 RN 59489-34-8 CAPLUS  
 CN Pyrazinecarbonitrile, 3-amino-5-methyl-6-phenyl-, 4-oxide (9CI) (CA INDEX NAME)



IT 69816-42-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and sapon. of)  
 RN 69816-42-8 CAPLUS  
 CN Pyrazinecarboxylic acid, 3-amino-6-(4-bromophenyl)-5-chloro-, ethyl ester  
 (9CI) (CA INDEX NAME)

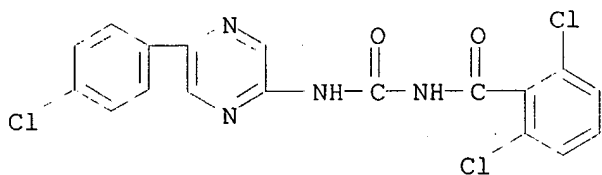


IT 59489-55-3P 59489-59-7P 69816-33-7P  
69816-84-8P 69816-85-9P 69816-86-0P  
69816-87-1P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

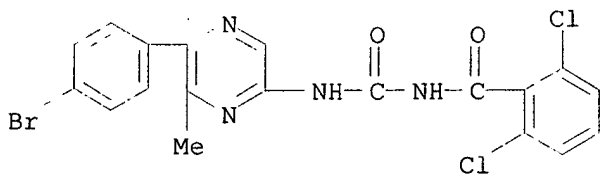
RN 59489-55-3 CAPLUS

CN Benzamide, 2,6-dichloro-N-[[[5-(4-chlorophenyl)pyrazinyl]amino]carbonyl]-  
(9CI) (CA INDEX NAME)



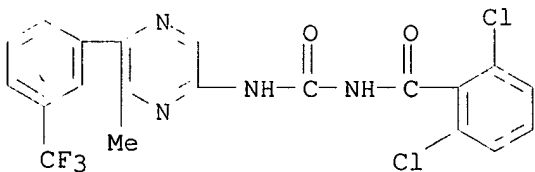
RN 59489-59-7 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-  
dichloro- (9CI) (CA INDEX NAME)



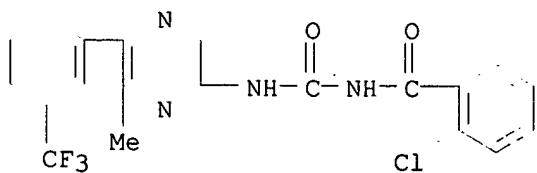
RN 69816-33-7 CAPLUS

CN Benzamide, 2,6-dichloro-N-[[[6-methyl-5-[3-(trifluoromethyl)phenyl]pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



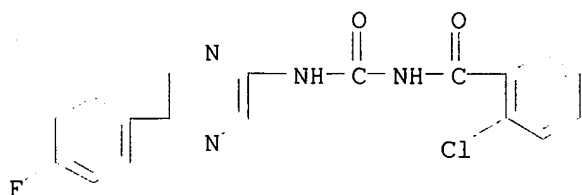
RN 69816-84-8 CAPLUS

CN Benzamide, 2-chloro-N-[[[6-methyl-5-[3-(trifluoromethyl)phenyl]pyrazinyl]a-  
mino]carbonyl]- (9CI) (CA INDEX NAME)



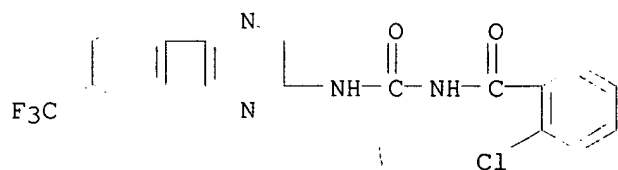
RN 69816-85-9 CAPLUS

CN Benzamide, 2-chloro-N-[[[5-(4-fluorophenyl)pyrazinyl]amino]carbonyl]-  
(9CI) (CA INDEX NAME)



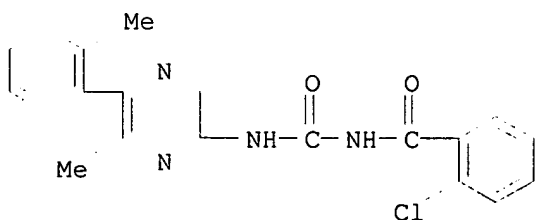
RN 69816-86-0 CAPLUS

CN Benzamide, 2-chloro-N-[[[5-[4-(trifluoromethyl)phenyl]pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



RN 69816-87-1 CAPLUS

CN Benzamide, 2-chloro-N-[[[6-methyl-5-(2-methylphenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



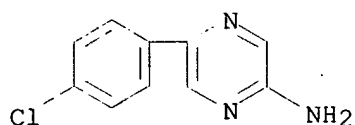
IT 59489-72-4 59489-75-7 69816-34-8

RL: RCT (Reactant)

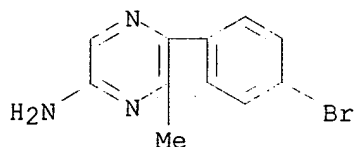
(reaction of, with benzamide and chloroformate)

RN 59489-72-4 CAPLUS

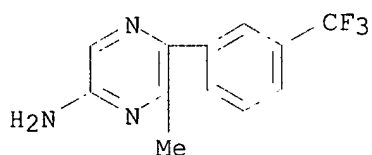
CN Pyrazinamine, 5-(4-chlorophenyl)- (9CI) (CA INDEX NAME)



RN 59489-75-7 CAPLUS  
 CN Pyrazinamine, 5-(4-bromophenyl)-6-methyl- (9CI) (CA INDEX NAME)



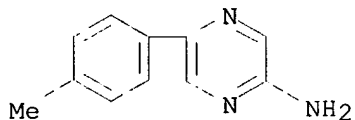
RN 69816-34-8 CAPLUS  
 CN Pyrazinamine, 6-methyl-5-[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



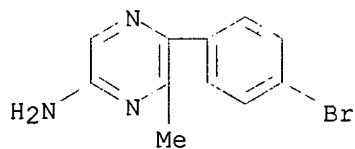
IT 59489-73-5 59489-75-7 59489-78-0  
 59489-79-1 59489-80-4 59489-82-6  
 69816-34-8 69816-44-0 69816-45-1  
 69816-46-2 69816-47-3 69816-48-4  
 69816-49-5 69816-50-8 69816-51-9  
 69816-52-0 69816-53-1 69816-55-3  
 69816-56-4

RL: RCT (Reactant)  
 (reaction of, with benzoyl isocyanate)

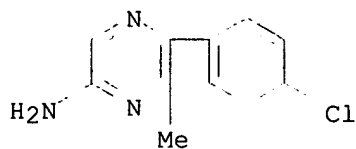
RN 59489-73-5 CAPLUS  
 CN Pyrazinamine, 5-(4-methylphenyl)- (9CI) (CA INDEX NAME)



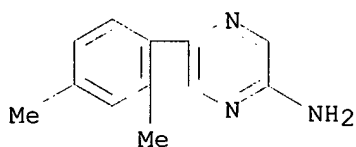
RN 59489-75-7 CAPLUS  
 CN Pyrazinamine, 5-(4-bromophenyl)-6-methyl- (9CI) (CA INDEX NAME)



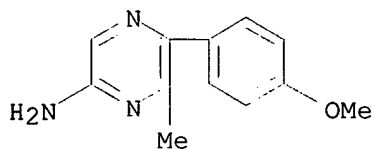
RN 59489-78-0 CAPLUS  
CN Pyrazinamine, 5-(4-chlorophenyl)-6-methyl- (9CI) (CA INDEX NAME)



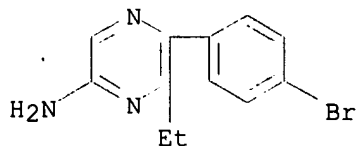
RN 59489-79-1 CAPLUS  
CN Pyrazinamine, 5-(2,4-dimethylphenyl)- (9CI) (CA INDEX NAME)



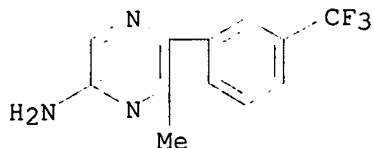
RN 59489-80-4 CAPLUS  
CN Pyrazinamine, 5-(4-methoxyphenyl)-6-methyl- (9CI) (CA INDEX NAME)



RN 59489-82-6 CAPLUS  
CN Pyrazinamine, 5-(4-bromophenyl)-6-ethyl- (9CI) (CA INDEX NAME)

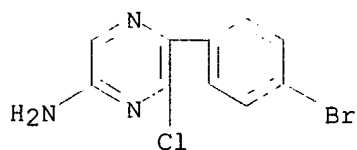


RN 69816-34-8 CAPLUS  
CN Pyrazinamine, 6-methyl-5-[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)

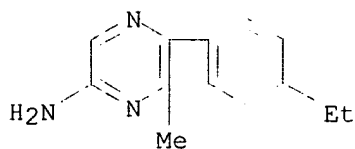


RN 69816-44-0 CAPLUS  
CN Pyrazinamine, 5-(4-bromophenyl)-6-chloro- (9CI) (CA INDEX NAME)

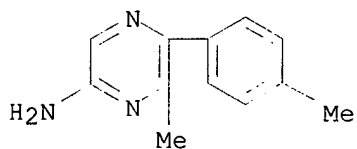




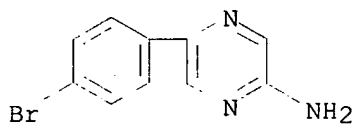
RN 69816-45-1 CAPLUS  
 CN Pyrazinamine, 5-(4-ethylphenyl)-6-methyl- (9CI) (CA INDEX NAME)



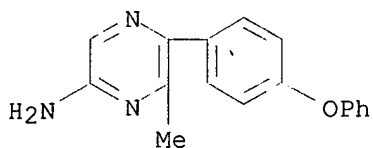
RN 69816-46-2 CAPLUS  
 CN Pyrazinamine, 6-methyl-5-(4-methylphenyl)- (9CI) (CA INDEX NAME)



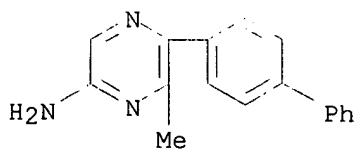
RN 69816-47-3 CAPLUS  
 CN Pyrazinamine, 5-(4-bromophenyl)- (9CI) (CA INDEX NAME)



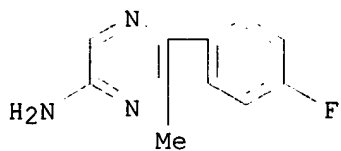
RN 69816-48-4 CAPLUS  
 CN Pyrazinamine, 6-methyl-5-(4-phenoxyphenyl)- (9CI) (CA INDEX NAME)



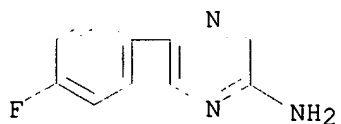
RN 69816-49-5 CAPLUS  
 CN Pyrazinamine, 5-[1,1'-biphenyl]-4-yl-6-methyl- (9CI) (CA INDEX NAME)



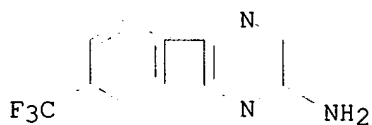
RN 69816-50-8 CAPLUS  
CN Pyrazinamine, 5-(4-fluorophenyl)-6-methyl- (9CI) (CA INDEX NAME)



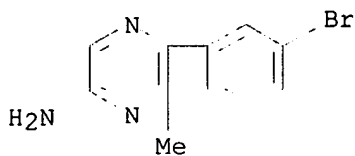
RN 69816-51-9 CAPLUS  
CN Pyrazinamine, 5-(4-fluorophenyl)- (9CI) (CA INDEX NAME)



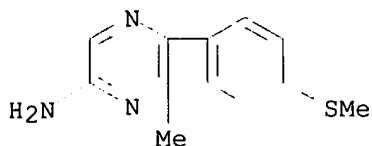
RN 69816-52-0 CAPLUS  
CN Pyrazinamine, 5-[4-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



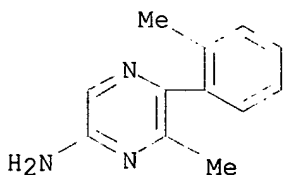
RN 69816-53-1 CAPLUS  
CN Pyrazinamine, 5-(3-bromophenyl)-6-methyl- (9CI) (CA INDEX NAME)



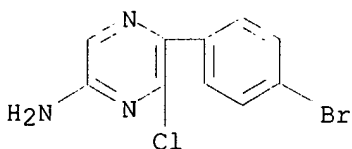
RN 69816-55-3 CAPLUS  
CN Pyrazinamine, 6-methyl-5-[4-(methylthio)phenyl]- (9CI) (CA INDEX NAME)



RN 69816-56-4 CAPLUS  
CN Pyrazinamine, 6-methyl-5-(2-methylphenyl)- (9CI) (CA INDEX NAME)



IT 69816-44-0  
RL: RCT (Reactant)  
(reaction of, with benzoyl isocyanates)  
RN 69816-44-0 CAPLUS  
CN Pyrazinamine, 5-(4-bromophenyl)-6-chloro- (9CI) (CA INDEX NAME)



L24 ANSWER 104 OF 145 CAPLUS COPYRIGHT 2001 ACS  
ACCESSION NUMBER: 1979:401835 CAPLUS  
DOCUMENT NUMBER: 91:1835  
TITLE: Renilla reniformis bioluminescence:  
luciferase-catalyzed production of nonradiating  
excited states from luciferin analogs and elucidation  
of the excited state species involved in energy  
transfer to Renilla green fluorescent protein  
AUTHOR(S): Hart, Russell C.; Matthews, John C.; Hori, Kazuo;  
Cormier, Milton J.  
CORPORATE SOURCE: Dep. Biochem., Univ. Georgia, Athens, GA, 30602, USA  
SOURCE: Biochemistry (1979), 18(11), 2204-10  
CODEN: BICHAW; ISSN: 0006-2960  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB A no. of coelenterate-type luciferin analogs with structural changes in  
the p-hydroxyphenyl and p-hydroxybenzyl substituents were synthesized.  
During chemiluminescence, each of the analogs produced a blue emission  
arising from the singlet excited state of the corresponding oxyluciferin  
monoanion. During bioluminescence, 2 emissions were obsd. with  
coelenterate-type luciferin and some of its analogs. One of these arose  
from the amide monoanion ( $\lambda_{\text{max}}$  simeq.480 nm) and the other arose  
from the neutral species of oxyluciferin ( $\lambda_{\text{max}}$  simeq.395 nm).  
Certain analogs produced both emissions, whereas others produced only the  
near-UV emission. Structural changes in the p-hydroxyphenyl substituent  
resulted in complete or nearly complete elimination of emission from the  
monoanion, resulting in >100-fold redn. in bioluminescence quantum yield.  
Structural changes in the p-hydroxybenzyl substituent did not have a  
significant effect on the emission spectrum but decreased the luciferase  
turnover no. .apprx.25-fold. The large decrease in the bioluminescence  
quantum yield obsd. with some of the analogs could be overcome by addn. of  
green fluorescent protein (GFP). GFP formed a rapid equil. complex with  
luciferase and was known to function in this system as an efficient  
energy-transfer acceptor. Spectral anal. showed that radiationless energy  
transfer occurs from the singlet excited state of the oxyluciferin  
monoanion and not from the neutral excited species. The energy-transfer  
data suggest that the luciferase-bound monoanion singlet excited state can  
be quenched by solvent and/or protein functional groups. Energy transfer

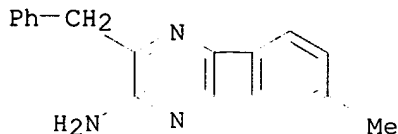
to GFP can apparently favorably compete with this quenching process. Lifetime measurements showed that the rate of energy transfer must be .gtoreq.3 .times. 108 s-1.

IT 70217-87-7P 70217-88-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation) (prepn. and reaction with benzyl glyoxylethylacetal)

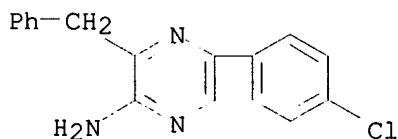
RN 70217-87-7 CAPLUS

CN Pyrazinamine, 5-(4-methylphenyl)-3-(phenylmethyl)- (9CI) (CA INDEX NAME)



RN 70217-88-8 CAPLUS

CN Pyrazinamine, 5-(4-chlorophenyl)-3-(phenylmethyl)- (9CI) (CA INDEX NAME)



L24 ANSWER 105 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1979:535581 CAPLUS

DOCUMENT NUMBER: 91:135581

TITLE: Effect of a new molt inhibitor (EL-494) on the spruce budworm, Choristoneura fumiferana (Lepidoptera: Tortricidae)

AUTHOR(S): Retnakaran, Arthur

CORPORATE SOURCE: Canadian For. Serv., Forest Pest Manage. Inst., Sault Ste Marie, ON, P6A 5M7, Can.

SOURCE: Can. Entomol. (1979), 111(7), 847-50

CODEN: CAENAF; ISSN: 0008-347X

DOCUMENT TYPE: Journal

LANGUAGE: English

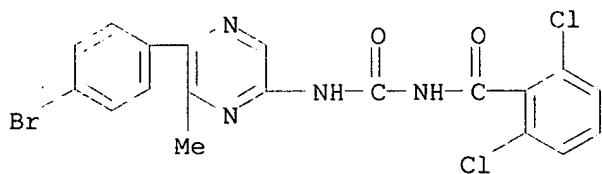
AB In lab tests on the spruce budworm EL-494.RTM. [59489-59-7] was more active than Dimilin. The EC50 (50% ED) detd. by diet tests was 0.205 ppm for the 3rd, 0.249 for the 4th, 0.287 for the 5th, and 0.486 for the 6th instars. In greenhouse tests this compd. was resistant to leaching and UV-degrdn.; the compd. remained active on spruce foliage for at least 15 days. In field tests EL-494 showed good potential as a control agent.

IT 59489-59-7

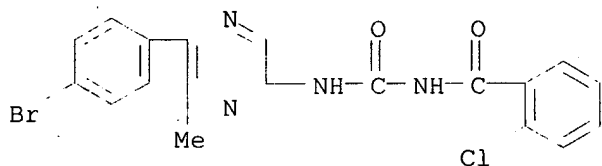
RL: BIOL (Biological study) (spruce budworm control by)

RN 59489-59-7 CAPLUS

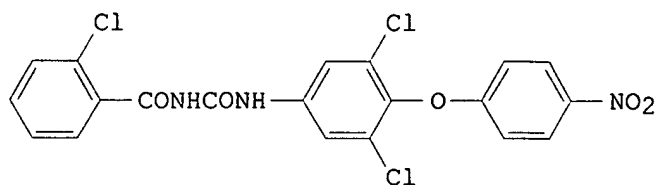
CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)



L24 ANSWER 106 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1980:70978 CAPLUS  
 DOCUMENT NUMBER: 92:70978  
 TITLE: Lycoriella mali: control in mushroom compost by incorporation of insecticides into compost  
 AUTHOR(S): Cantelo, William W.  
 CORPORATE SOURCE: Veg. Lab., Sci. Educ. Adm., Beltsville, MD, 20705, USA  
 SOURCE: J. Econ. Entomol. (1979), 72(5), 703-5  
 CODEN: JEENAI; ISSN: 0022-0493  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Six of 29 chems. evaluated against *L. mali*, the major insect pest of com. mushrooms, gave control equal to that of diazinon [333-41-5] at lower doses. Those found to require less as well as their LD95 and LD50 (ppm) values, resp., were: BAY SIR 8514 (2-chloro-N-[[[4-(trifluoromethoxy) phenyl] amino]-carbonyl] benzamide) [64628-44-0] (0.4, 0.001); chlorpyrifos [2921-88-2] (11.0, 1.5); L-7063 (N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino] carbonyl]-2-chlorobenzamide [69816-57-5] (21.2, 3.8); ethoprop [13194-48-4] (25.1, 12.3); dimethoate [60-51-5] (37.9, 7.3), and diflubenzuron [35367-38-5] (49.2, 4.9).  
 IT 69816-57-5  
 RL: BIOL (Biological study)  
 (Lycoriella mali control by)  
 RN 69816-57-5 CAPLUS  
 CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)



L24 ANSWER 107 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1979:401329 CAPLUS  
 DOCUMENT NUMBER: 91:1329  
 TITLE: Activity of seven chitin synthesis inhibitors against development of stored product insects  
 AUTHOR(S): Kramer, Karl J.; McGregor, Harrison E.  
 CORPORATE SOURCE: Grain Mark. Res. Lab., Sci. Educ. Adm., Manhattan, KS, 66502, USA  
 SOURCE: Environ. Entomol. (1979), 8(2), 274-6  
 CODEN: EVETBX; ISSN: 0046-225X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI



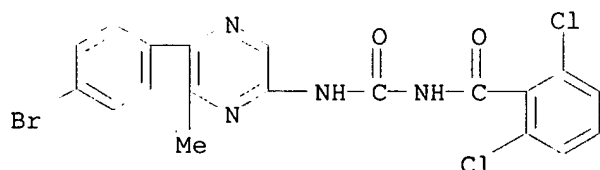
AB Seven chitin [1398-61-4] synthesis-inhibiting compds. were evaluated for activity against stored product insects in wheat. None of the compds. was acutely toxic to any species. I [59067-33-3] with ID95 values of 0.1-0.8 ppm, was most effective. The controlled species were : Tribolium confusum, granary weevil (*Sitophilus granarius*), lesser grain borer (*Rhyzopertha dominica*), rice weevil (*S. oryzae*), sawtoothed grain beetle (*Oryzaephilus surinamensis*), almond moth (*Ephestia cautella*), and Indian meal moth (*Plodia interpunctella*). Other compds. were at least 10 times less effective.

IT 59489-59-7

RL: PRP (Properties)  
(toxicity of, to grain pest)

RN 59489-59-7 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)



L24 ANSWER 108 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1979:451064 CAPLUS

DOCUMENT NUMBER: 91:51064

TITLE: Structure-activity relationships of benzoylphenyl ureas as toxicants and chitin synthesis inhibitors in *Oncopeltus fasciatus*

AUTHOR(S): Hajjar, Nicolas P.; Casida, John E.

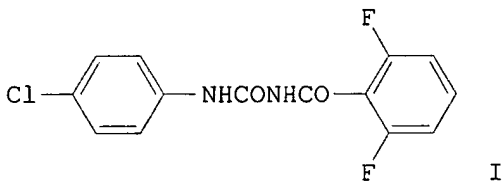
CORPORATE SOURCE: Dep. Entomol. Sci., Univ. California, Berkeley, CA, 94720, USA

SOURCE: Pestic. Biochem. Physiol. (1979), 11(1), 33-45  
CODEN: PCBPBS; ISSN: 0048-3575

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



AB Diflubenzuron (I) [35367-38-5] applied to milkweed bug (*O. fasciatus*, fifth-instar nymphs) reduced the chitin [1398-61-4] content and survival (topical LD50 2.4  $\mu\text{g/g}$ ) and slightly prolonged the instar duration before molting. With adults from treated fifth-instar nymphs, it also reduced egg prodn., egg hatchability, and viability of the first-instar nymphs. I did not alter in vivo metab. of  $\alpha$ -[3604-87-3] or  $\beta$ -ecdysone [5289-74-7] by fifth-instar nymphs. Isolated abdomens, with their contents removed, from adults 12 h after emergence, converted  $^{14}\text{C}$ -labeled glucose, glucosamine, and N-acetylglucosamine to chitin- $^{14}\text{C}$  with yields of 4-5% within 1 h. Chitin- $^{14}\text{C}$  formation in this in vitro system was inhibited 50% by I and polyoxin D [22976-86-9] at 5.5  $\times 10^{-7}$  and 1.5  $\times 10^{-3}\text{M}$  or 0.2 and 4.3  $\mu\text{g/g}$  abdominal wall, resp. A I concn. that decreased chitin- $^{14}\text{C}$  formation from N-acetylglucosamine- $^{14}\text{C}$  by 43% resulted in 32% accumulation of uridine 5'-diphospho-N-acetylglucosamine  $^{14}\text{C}$ . Structure-activity studies with 24 benzoylphenylureas indicated a good correlation between their toxicity to fifth-instar nymphs and their potency as in vivo inhibitors of postecdysial chitin synthesis. The primary mode of action of benzoylphenylureas involved direct and rapid inhibition of chitin synthesis within the integument rather than alterations in levels of extraintegumental hormones.

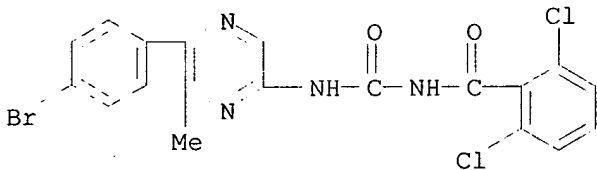
IT 59489-59-7

RL: BIOL (Biological study)

(chitin formation inhibition by, in milkweed bug)

RN 59489-59-7 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)



L24 ANSWER 109 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1979:1635 CAPLUS

DOCUMENT NUMBER: 90:1635

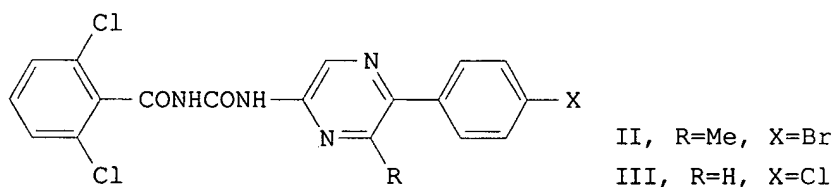
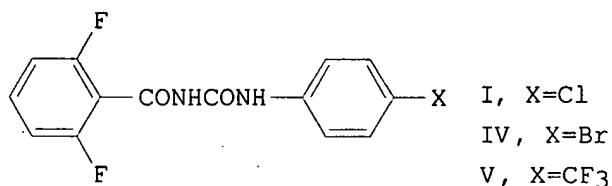
TITLE: Laboratory tests of diflubenzuron and four analogs against the pink bollworm and a field cage test with diflubenzuron and EL-494 for control of the pink bollworm and cotton leafperforator

AUTHOR(S): Flint, H. M.; Smith, R. L.; Noble, J. M.; Shaw, D.; DeMilo, A. B.; Khalil, F.

CORPORATE SOURCE: West. Cotton Res. Lab., Sci. Educ. Adm., Phoenix, Ariz., USA

SOURCE: J. Econ. Entomol. (1978), 71(4), 664-66

DOCUMENT TYPE: CODEN: JEENAI; ISSN: 0022-0493  
 LANGUAGE: Journal  
 GI English

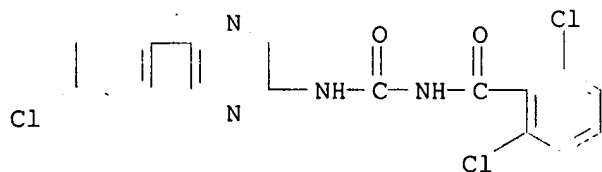


AB In lab tests, diflubenzuron (I) [35367-38-5], EL-494 (II) [59489-59-7], EL-588 (III) [59489-55-3], AI3-63220 (IV) [35367-39-6], and AI3-63223 (V) [35367-31-8] prevented development of adult pink bollworms, *Pectinophora gossypiella* when they were fed in larval diet at 1-10 ppm. Contact expts. with adult moths indicated little activity at .ltoreq.18 mg/cm<sup>2</sup> except for IV and V which caused mortality after a 1 wk exposure to treated cage surfaces. I and II were tested for systemic activity by treating foliage of cotton plants at rates .ltoreq.15.2 mg/plant without effect on subsequent development of the pink bollworm. A further test in field cages using the 2 compds. at a rate of 0.11 kg/ha indicated that I was superior to II for control of the cotton leafperforator, *Bucculatrix thurberiella* but neither compd. had any activity against the pink bollworm.

IT 59489-55-3 59489-59-7  
 RL: BIOL (Biological study)  
 (cotton pink bollworm control by)

RN 59489-55-3 CAPLUS

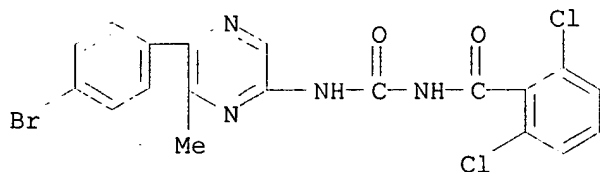
CN Benzamide, 2,6-dichloro-N-[[[5-(4-chlorophenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



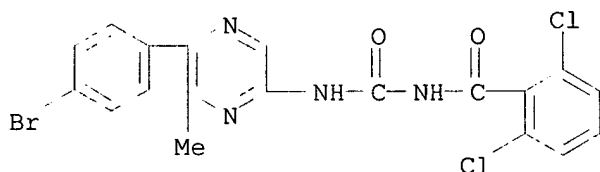
RN 59489-59-7 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)

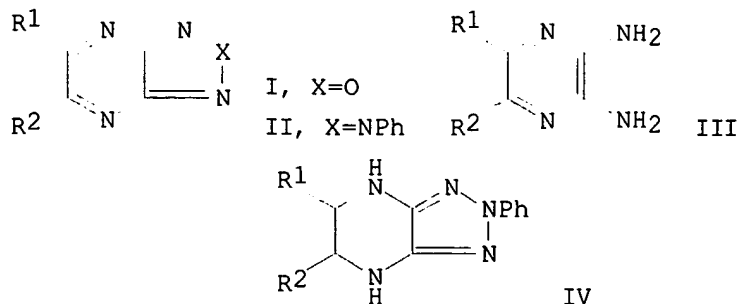




L24 ANSWER 110 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1979:133967 CAPLUS  
 DOCUMENT NUMBER: 90:133967  
 TITLE: Growth of *Heliothis armigera* larvae treated with a benzoylphenylurea derivative  
 AUTHOR(S): Fytizas, E.  
 CORPORATE SOURCE: Lab. Physiol. Insects, Inst. Phytopathol., Athens, Greece  
 SOURCE: Meded. Fac. Landbouwwet., Rijksuniv. Gent (1978), 43(2 Pt. 1), 519-25  
 CODEN: MFLRA3; ISSN: 0368-9697  
 DOCUMENT TYPE: Journal  
 LANGUAGE: French  
 AB Substantial mortality was shown by 5th and 6th instar larvae of *H. armigera* fed leaves treated with 0.025-0.1% EL-494 [N-[[[5-(4-bromophenyl)-6-methyl-2-pyrazinyl]amino]carbonyl]-2,6-dichlorobenzamide] [59489-59-7] or TH 6040 [35367-38-5]. The surviving larvae died during pupation, due to metamorphic disturbance. The std. ZR-619 induced higher mortality, but some survivals reached the pupal stage.  
 IT 59489-59-7  
 RL: BIOL (Biological study)  
 (Heliothis armigera metamorphosis response to)  
 RN 59489-59-7 CAPLUS  
 CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)



L24 ANSWER 111 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1978:62364 CAPLUS  
 DOCUMENT NUMBER: 88:62364  
 TITLE: Studies on pyrazines. 3. A facile synthetic method of 2,3-diaminopyrazines  
 AUTHOR(S): Sato, Nobuhiro; Adachi, Jiro  
 CORPORATE SOURCE: Dep. Chem., Yokohama City Univ., Yokohama, Japan  
 SOURCE: J. Org. Chem. (1978), 43(2), 341-3  
 CODEN: JOCEAH  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI



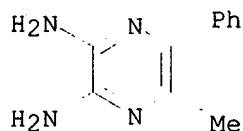
AB Furazano[3,4-b]pyrazines I (R1 = Ph, R2 = H, Me, Ph) and 2-phenyl-1,2,3-triazolo[4,5-b]pyrazines II (R1 = R2 = H; R1 = Me, R2 = H, Me; R1 = Ph, R2 = H, Me, Ph) were prepd. in excellent yields by condensation of 3,4-diaminofurazan and 4,5-diamino-2-phenyl-1,2,3-triazole with 1,2-dicarbonyl compds. R1COCOR2, resp. Catalytic hydrogenation of I (R's the same) over Pd/C gave 2,3-diaminopyrazines III (R's the same) in good yields, though that of II (R's the same) provided 2-phenyl-1,2,3-triazolo[4,5-b]piperazines IV (R's the same) in excellent yields.

IT 32493-84-8P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

RN 32493-84-8 CAPLUS

CN 2,3-Pyrazinediamine, 5-methyl-6-phenyl- (9CI) (CA INDEX NAME)



124 ANSWER 112 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1979:519858 CAPLUS

DOCUMENT NUMBER: 91:119858

TITLE: A Bioluminescence assay for PAP (3',5'-diphosphoadenosine) and PAPS (3'-phosphoadenylyl sulfate)

AUTHOR(S): Anderson, James Michael; Hori, Kazuo; Cormier, Milton J.

CORPORATE SOURCE: Boyd Grad. Stud. Res. Cent., Univ. Georgia, Athens, GA, 30602, USA

SOURCE: Methods Enzymol. (1978), 57(Biolumin. Chemilumin.), 244-57

CODEN: MENZAU; ISSN: 0076-6879

DOCUMENT TYPE: Journal

LANGUAGE: English

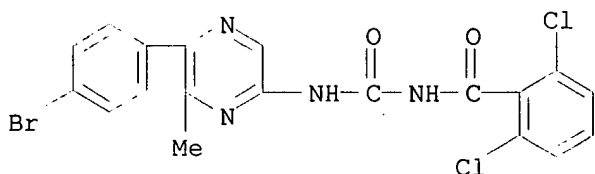
AB Procedures in the bioluminescence assay of PAP and PAPS using the luciferin-luciferase reaction in *Renilla reniformis* are described. The assay is sensitive to 0.1 pmol of PAP. The synthesis of the substrate benzyl luciferyl sulfate and isolation of luciferin sulfokinase and luciferase are also described.

IT 40040-81-1

RL: ANST (Analytical study)

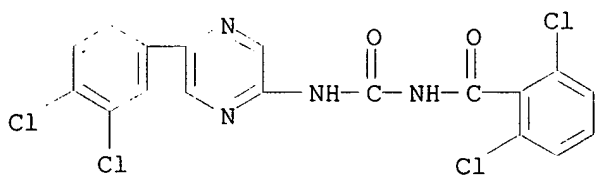
RN 59489-59-7 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)



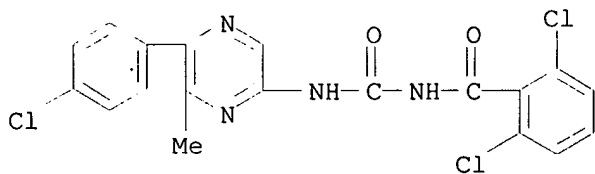
RN 59489-62-2 CAPLUS

CN Benzamide, 2,6-dichloro-N-[[[5-(3,4-dichlorophenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



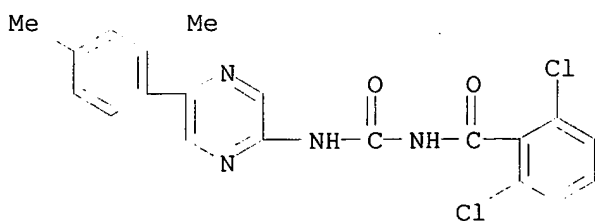
RN 59489-63-3 CAPLUS

CN Benzamide, 2,6-dichloro-N-[[[5-(4-chlorophenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



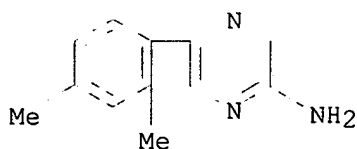
RN 59489-64-4 CAPLUS

CN Benzamide, 2,6-dichloro-N-[[[5-(2,4-dimethylphenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)

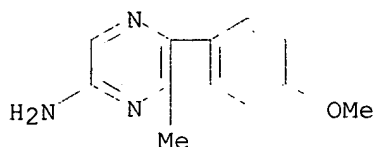


RN 59489-65-5 CAPLUS

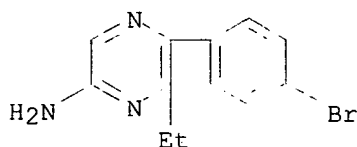
CN Benzamide, 2,6-dichloro-N-[[[5-(4-methoxyphenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



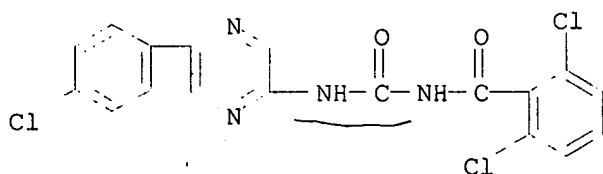
RN 59489-80-4 CAPLUS  
 CN Pyrazinamine, 5-(4-methoxyphenyl)-6-methyl- (9CI) (CA INDEX NAME)



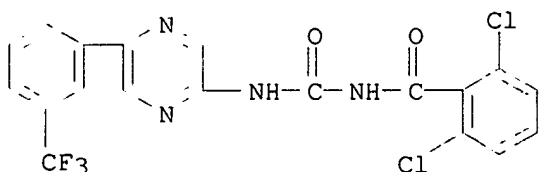
RN 59489-82-6 CAPLUS  
 CN Pyrazinamine, 5-(4-bromophenyl)-6-ethyl- (9CI) (CA INDEX NAME)

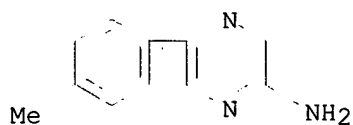


IT 59489-55-3P 59489-57-5P 59489-59-7P  
 59489-62-2P 59489-63-3P 59489-64-4P  
 59489-65-5P 59489-69-9P 65234-72-2P  
 RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)  
 (prepn. and insecticidal activity of)  
 RN 59489-55-3 CAPLUS  
 CN Benzamide, 2,6-dichloro-N-[[[5-(4-chlorophenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)

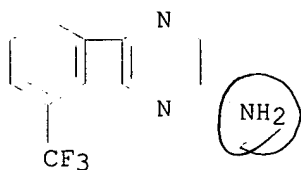


RN 59489-57-5 CAPLUS  
 CN Benzamide, 2,6-dichloro-N-[[[5-[3-(trifluoromethyl)phenyl]pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)

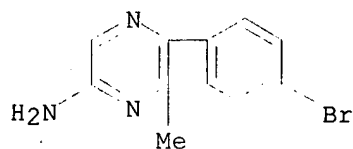




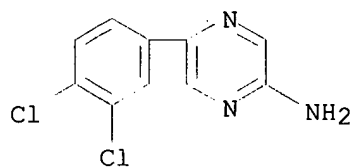
RN 59489-74-6 CAPLUS  
 CN Pyrazinamine, 5-[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



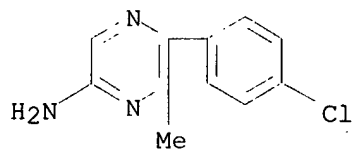
RN 59489-75-7 CAPLUS  
 CN Pyrazinamine, 5-(4-bromophenyl)-6-methyl- (9CI) (CA INDEX NAME)



RN 59489-77-9 CAPLUS  
 CN Pyrazinamine, 5-(3,4-dichlorophenyl)- (9CI) (CA INDEX NAME)



RN 59489-78-0 CAPLUS  
 CN Pyrazinamine, 5-(4-chlorophenyl)-6-methyl- (9CI) (CA INDEX NAME)

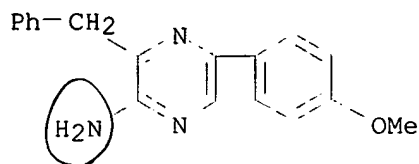


RN 59489-79-1 CAPLUS  
 CN Pyrazinamine, 5-(2,4-dimethylphenyl)- (9CI) (CA INDEX NAME)

(condensation of, with benzyl glyoxal di-Et acetal)

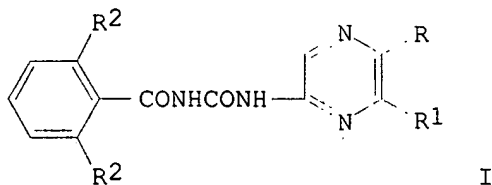
RN 40040-81-1 CAPLUS

CN Pyrazinamine, 5-(4-methoxyphenyl)-3-(phenylmethyl)- (9CI) (CA INDEX NAME)



124 ANSWER 113 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1978:50924 CAPLUS  
 DOCUMENT NUMBER: 88:50924  
 TITLE: 1-Benzoyl-3-pyrazinylureas  
 PATENT ASSIGNEE(S): Lilly, Eli, and Co., USA  
 SOURCE: Japan. Kokai, 24 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 4  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 52010285	A2	19770126	JP 1976-1426	19760101
PRIORITY APPLN. INFO.: GI			US 1975-595904	19750714



AB I [R = H, Cl, Me, (substituted)Ph, etc.; R1 = H, Cl, Me, Et, CN, or RR1 = benzo; R2 = Cl, Me] were prepd. by reaction of 2-amino-5-R-6-R1-pyrazoles (II) with benzoyl isocyanates 2,6-R22C6H3CONCO III. I are agricultural insecticides. Thus, 0.25 g II (R = Ph, R1 = H) and 0.45 g III (R2 = Cl) in AcOEt were stirred overnight to give the corresponding I.

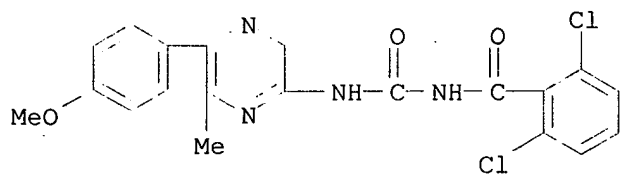
IT 59489-73-5 59489-74-6 59489-75-7  
 59489-77-9 59489-78-0 59489-79-1  
 59489-80-4 59489-82-6

RL: RCT (Reactant)

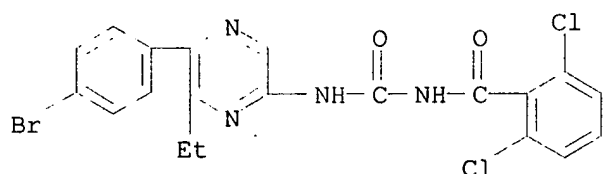
(cyclization of, with benzoyl isocyanate, benzoylpyrazinylurea deriv. from)

RN 59489-73-5 CAPLUS

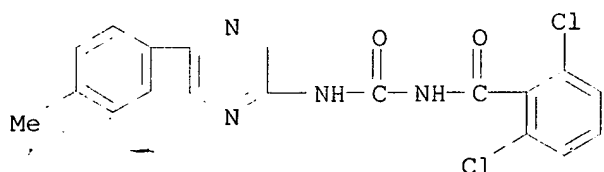
CN Pyrazinamine, 5-(4-methylphenyl)- (9CI) (CA INDEX NAME)



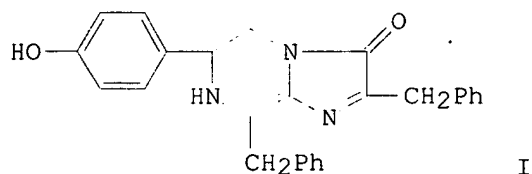
RN 59489-69-9 CAPLUS  
 CN Benzamide, N-[[[5-(4-bromophenyl)-6-ethylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)



RN 65234-72-2 CAPLUS  
 CN Benzamide, 2,6-dichloro-N-[[[5-(4-methylphenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



L24 ANSWER 114 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1977:596264 CAPLUS  
 DOCUMENT NUMBER: 87:196264  
 TITLE: Substrate and substrate analog binding properties of Renilla luciferase  
 AUTHOR(S): Matthews, John C.; Hori, Kazuo; Cormier, Milton J.  
 CORPORATE SOURCE: Dep. Biochem., Univ. Georgia, Athens, Ga., USA  
 SOURCE: Biochemistry (1977), 16(24), 5217-20  
 CODEN: BICHAW  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI



AB The binding characteristics of luciferin, luciferin analogs (e.g. I), and competitive inhibitors of the luciferin-luciferase reaction were studied. Luciferin binding and orientation in the single luciferin binding site of luciferase from *R. reniformis* are highly specific for and dependent upon the 3 group substituents of the luciferin mol., whereas the imidazolone-pyrazine nucleus of luciferin is not directly involved in binding. Anaerobic luciferin binding promotes a rapid concn.-dependent aggregation of luciferase which results in irreversible inactivation of the enzyme. This aggregation phenomenon is not obsd. upon binding of oxyluciferin, luciferyl sulfate, or luciferin analogs in which the substituent at the 2 position of the imidazolone-pyrazine ring has been substantially altered.

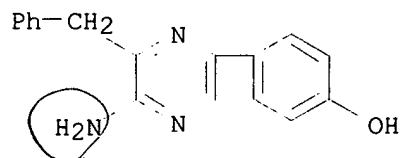
IT 37156-84-6 50909-85-8 64750-82-9

RL: PROC (Process)

(luciferase binding of, structural factors in)

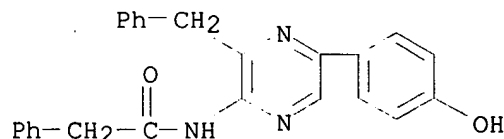
RN 37156-84-6 CAPLUS

CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



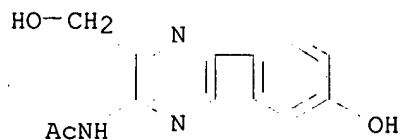
RN 50909-85-8 CAPLUS

CN Benzeneacetamide, N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI)  
(CA INDEX NAME)



RN 64750-82-9 CAPLUS

CN Acetamide, N-[3-(hydroxymethyl)-5-(4-hydroxyphenyl)pyrazinyl]- (9CI) (CA INDEX NAME)



L24 ANSWER 115 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1978:507551 CAPLUS

DOCUMENT NUMBER: 89:107551

TITLE: Alternative mechanism for dioxetane decomposition

AUTHOR(S): McCapra, Frank

CORPORATE SOURCE: Sch. Mol. Sci., Univ. Sussex, Brighton, Engl.

SOURCE: J. Chem. Soc., Chem. Commun. (1977), (24), 946-8

CODEN: JCCCAT; ISSN: 0022-4936

DOCUMENT TYPE: Journal

LANGUAGE: English

Searched by Barb O'Bryen, STIC 308-4291

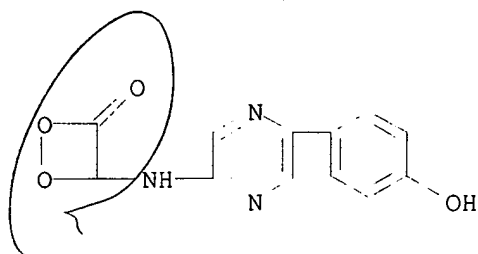


AB Dioxetanes substituted by, or reacting with, compds. with strongly electron-donating groups are postulated to decomp. via radical ions; excitation occurs via electron transfer.

IT 66985-97-5D, derivs.  
RL: RCT (Reactant)  
(decompn. of, mechanism of)

RN 66985-97-5 CAPLUS

CN 1,2-Dioxetan-3-one, 4-[[5-(4-hydroxyphenyl)pyrazinyl]amino]- (9CI) (CA INDEX NAME)



24 ANSWER 116 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1976:421468 CAPLUS

DOCUMENT NUMBER: 85:21468

TITLE: 1-(Substituted benzoyl)-3-(substituted pyrazinyl)ureas

INVENTOR(S): Miesel, John L.

PATENT ASSIGNEE(S): Lilly, Eli, and Co., USA

SOURCE: Ger. Offen., 70 pp.  
CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 4

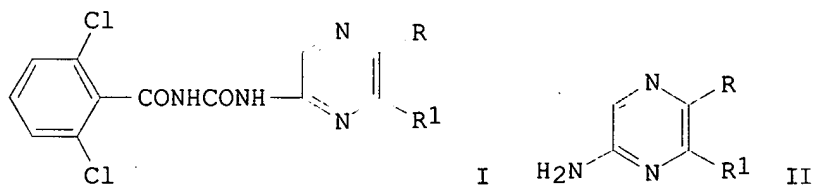
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2541116	A1	19760408	DE 1975-2541116	19750915
DE 2541116	C2	19850718		
IN 142286	A	19770618	IN 1975-CA1744	19750910
BE 833288	A1	19760311	BE 1975-1006877	19750911
IL 48092	A1	19790312	IL 1975-48092	19750912
AU 7584845	A1	19770324	AU 1975-84845	19750915
GB 1521714	A	19780816	GB 1975-37933	19750916
CA 1070308	A1	19800122	CA 1975-235561	19750916
NL 7510901	A	19760323	NL 1975-10901	19750917
ZA 7505945	A	19770427	ZA 1975-5945	19750917
AT 7507146	A	19771015	AT 1975-7146	19750917
CS 195710	P	19800229	CS 1975-6298	19750917
DK 7504195	A	19760320	DK 1975-4195	19750918
SE 7510474	A	19760322	SE 1975-10474	19750918
SE 426066	B	19821206		
SE 426066	C	19830317		
PL 102954	P	19790531	PL 1975-197527	19750918
PL 106054	P	19791130	PL 1975-183470	19750918
CH 617192	A	19800514	CH 1975-12147	19750918
HU 19446	O	19810228	HU 1975-EI646	19750918
HU 177200	P	19810828		
JP 51056480	A2	19760518	JP 1975-114226	19750919
BR 7506073	A	19760803	BR 1975-6073	19750919
FR 2299327	A1	19760827	FR 1975-28772	19750919
FR 2299327	B1	19780407		
DD 123341	C	19761212	DD 1975-188451	19750919
ES 441124	A1	19770616	ES 1975-441124	19750919

DD 128762	C	19771207	DD 1975-196898	19750919
SU 662011	D	19790505	SU 1975-2171811	19750919
SU 660566	D	19790430	SU 1976-2380308	19760709
AT 7705635	A	19800615	AT 1977-5635	19770729
AT 360800	B	19810126		
SE 7806517	A	19780602	SE 1978-6517	19780602
SE 420042	B	19810914		
SE 420042	C	19820107		

PRIORITY APPLN. INFO.: US 1974-507492 19740919  
AT 1975-7146 19750917

GI



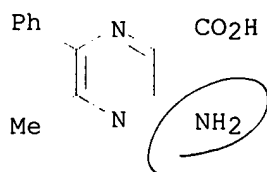
AB Insecticidal dichlorobenzoylureidopyrazines I [R = Cl, Ph, H, Me, Br, Et, substituted phenyl, CH<sub>2</sub>CMe<sub>3</sub>, CMe<sub>3</sub>; R<sub>1</sub> = H, Me, Cl, CN; RR<sub>1</sub> = substituted (CH)<sub>4</sub>] (29 compds.) were prepd. by treating aminopyrazines II with 2,6-Cl<sub>2</sub>C<sub>6</sub>H<sub>3</sub>CONCO, obtained by treating 2,6-Cl<sub>2</sub>C<sub>6</sub>H<sub>3</sub>CONH<sub>2</sub> with (COCl<sub>2</sub>)<sub>2</sub>. At 1000 ppm I gave complete control of *Spodoptera eridania*.

IT 5284-16-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and decarboxylation of)

RN 5284-16-2 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-5-methyl-6-phenyl- (7CI, 8CI, 9CI) (CA INDEX NAME)

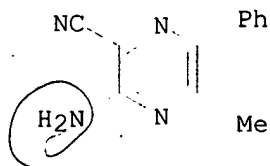


IT 59489-35-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and hydrolysis of)

RN 59489-35-9 CAPLUS

CN Pyrazinecarbonitrile, 3-amino-5-methyl-6-phenyl- (9CI) (CA INDEX NAME)



IT 59489-52-0P 59489-55-3P 59489-57-5P

59489-59-7P 59489-62-2P 59489-63-3P

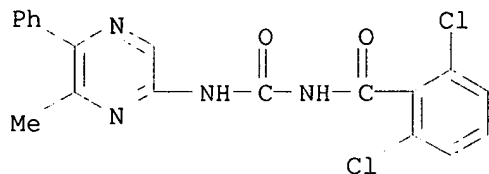
59489-64-4P 59489-65-5P 59489-69-9P

RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic

preparation); BIOL (Biological study); PREP (Preparation)  
(prepn. and insecticidal activity of)

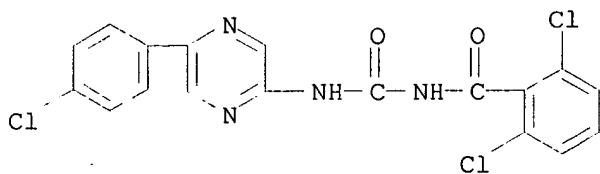
RN 59489-52-0 CAPLUS

CN Benzamide, 2,6-dichloro-N-[[[6-methyl-5-phenylpyrazinyl]amino]carbonyl]-  
(9CI) (CA INDEX NAME)



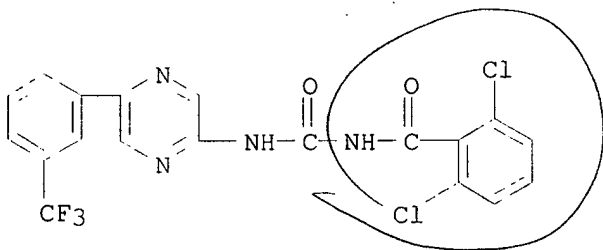
RN 59489-55-3 CAPLUS

CN Benzamide, 2,6-dichloro-N-[[[5-(4-chlorophenyl)pyrazinyl]amino]carbonyl]-  
(9CI) (CA INDEX NAME)



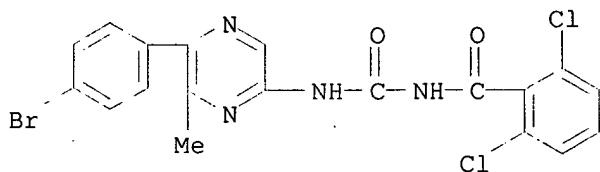
RN 59489-57-5 CAPLUS

CN Benzamide, 2,6-dichloro-N-[[[5-[3-(trifluoromethyl)phenyl]pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



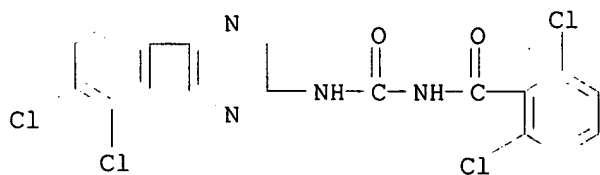
RN 59489-59-7 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)



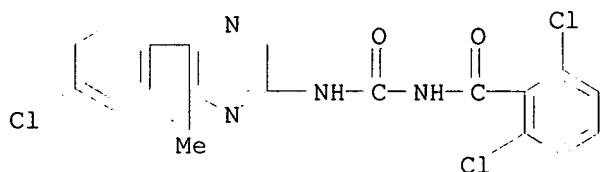
RN 59489-62-2 CAPLUS

CN Benzamide, 2,6-dichloro-N-[[[5-(3,4-dichlorophenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



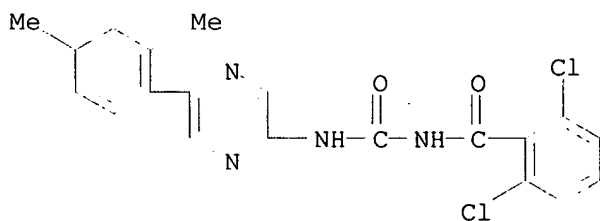
RN 59489-63-3 CAPLUS

CN Benzamide, 2,6-dichloro-N-[[[5-(4-chlorophenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



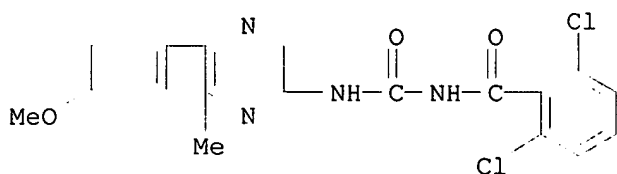
RN 59489-64-4 CAPLUS

CN Benzamide, 2,6-dichloro-N-[[[5-(2,4-dimethylphenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



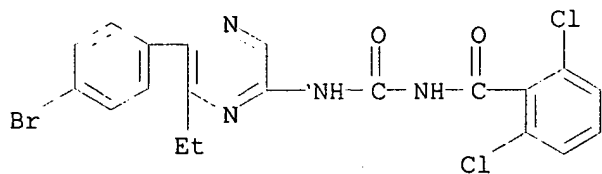
RN 59489-65-5 CAPLUS

CN Benzamide, 2,6-dichloro-N-[[[5-(4-methoxyphenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



RN 59489-69-9 CAPLUS

CN Benzamide, N-[[[5-(4-bromophenyl)-6-ethylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)

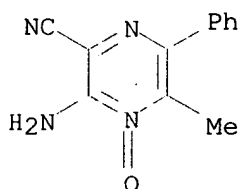


IT 59489-34-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and redn. of)

RN 59489-34-8 CAPLUS

CN Pyrazinecarbonitrile, 3-amino-5-methyl-6-phenyl-, 4-oxide (9CI) (CA INDEX NAME)

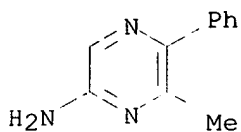


IT 59489-36-0P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

RN 59489-36-0 CAPLUS

CN Pyrazinamine, 6-methyl-5-phenyl- (9CI) (CA INDEX NAME)



IT 59489-72-4 59489-73-5 59489-74-6

59489-75-7 59489-77-9 59489-78-0

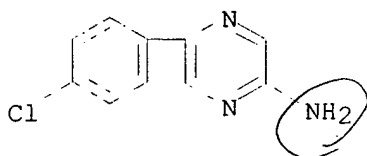
59489-79-1 59489-80-4 59489-82-6

RL: RCT (Reactant)

(reaction of, with dichlorobenzoyl isocyanate)

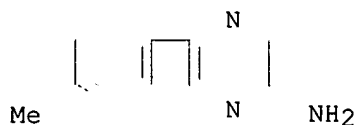
RN 59489-72-4 CAPLUS

CN Pyrazinamine, 5-(4-chlorophenyl)- (9CI) (CA INDEX NAME)

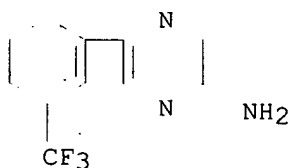


RN 59489-73-5 CAPLUS

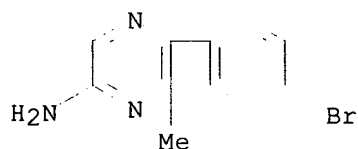
CN Pyrazinamine, 5-(4-methylphenyl)- (9CI) (CA INDEX NAME)



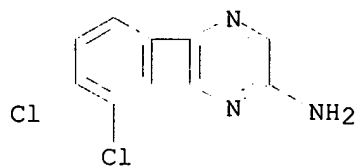
RN 59489-74-6 CAPLUS  
 CN Pyrazinamine, 5-[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



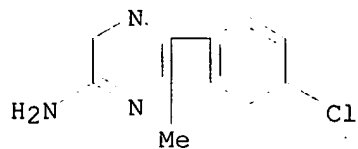
RN 59489-75-7 CAPLUS  
 CN Pyrazinamine, 5-(4-bromophenyl)-6-methyl- (9CI) (CA INDEX NAME)



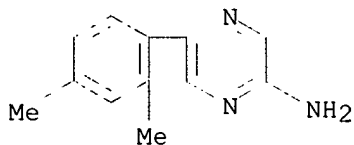
RN 59489-77-9 CAPLUS  
 CN Pyrazinamine, 5-(3,4-dichlorophenyl)- (9CI) (CA INDEX NAME)



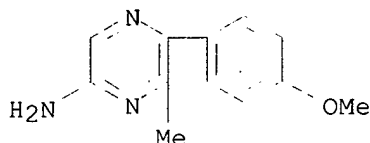
RN 59489-78-0 CAPLUS  
 CN Pyrazinamine, 5-(4-chlorophenyl)-6-methyl- (9CI) (CA INDEX NAME)



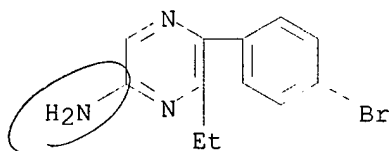
RN 59489-79-1 CAPLUS  
 CN Pyrazinamine, 5-(2,4-dimethylphenyl)- (9CI) (CA INDEX NAME)



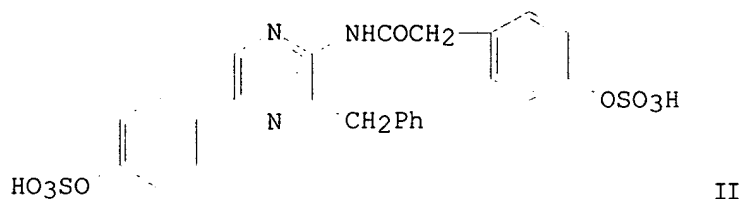
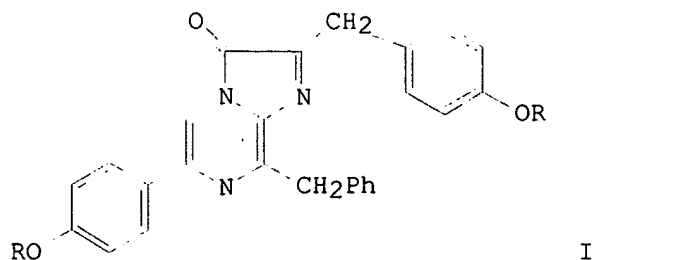
RN 59489-80-4 CAPLUS  
 CN Pyrazinamine, 5-(4-methoxyphenyl)-6-methyl- (9CI) (CA INDEX NAME)



RN 59489-82-6 CAPLUS  
 CN Pyrazinamine, 5-(4-bromophenyl)-6-ethyl- (9CI) (CA INDEX NAME)



✓  
 L24 ANSWER 117 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1977:16640 CAPLUS  
 DOCUMENT NUMBER: 86:16640  
 TITLE: Squid bioluminescence III. Isolation and structure of  
 Watasenia luciferin  
 AUTHOR(S): Inoue, Shoji; Kakoi, Hisae; Goto, Toshio  
 CORPORATE SOURCE: Fac. Pharm., Meijo Univ., Nagoya, Japan  
 SOURCE: Tetrahedron Lett. (1976), (34), 2971-4  
 CODEN: TELEAY  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI



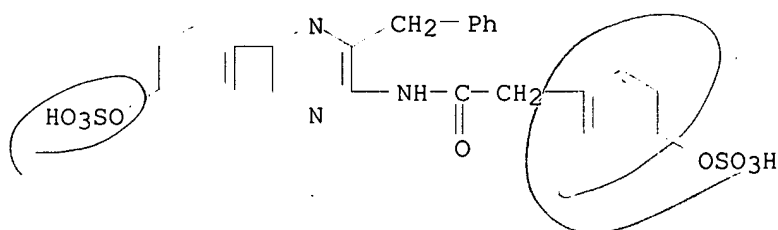
AB The structure of Watasenia luciferin (I; R = SO<sub>3</sub>H) isolated from the arm photophores of Watasenia scintillans, was detd. from spectral data. The bioluminescence of Watasenia involves the sulfurization of Watasenia preluciferin (I; R = H) to I (R = SO<sub>3</sub>H) which is stored in a bound form. Light is emitted from the oxyluciferin II in a singlet excited state which is produced by oxidn. of I (R = SO<sub>3</sub>H). I (R = SO<sub>3</sub>H) was prepd. from I (R = H) by treatment with SO<sub>3</sub>-pyridine.

IT 54028-46-5P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

RN 54028-46-5 CAPLUS

CN Benzeneacetamide, N-[3-(phenylmethyl)-5-[4-(sulfooxy)phenyl]pyrazinyl]-4-(sulfooxy)- (9CI) (CA INDEX NAME)



L24 ANSWER 118 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1976:540198 CAPLUS

DOCUMENT NUMBER: 85:140198

TITLE: In vitro energy transfer in Renilla bioluminescence

AUTHOR(S): Ward, William W.; Cormier, Milton J.

CORPORATE SOURCE: Dep. Biochem., Univ. Georgia, Athens, Ga., USA

SOURCE: J. Phys. Chem. (1976), 80(20), 2289-91

CODEN: JPCHAX

DOCUMENT TYPE: Journal

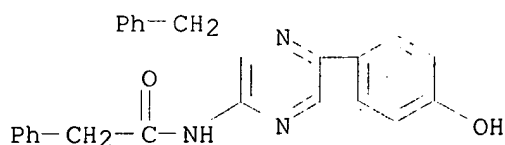
LANGUAGE: English

AB The in vitro bioluminescent oxidn. of Renilla reniformis (sea pansy) luciferin by luciferase produced a broad, structureless emission, peaking in the blue at 490 nm. In contrast, the live animal produced a structured emission peaking in the green at 509 nm. This difference in emission characteristics was due to the presence in Renilla of a green fluorescent protein (GFP). Addn. of GFP in vitro sensitized the oxyluciferin product



excited state, resulting in the narrow, structured green emission characteristic of GFP fluorescence ( $\lambda_{\text{max}}$  509 nm). Under conditions of efficient in vitro energy transfer ( $2.7 \times 10^{-6}$  M GFP) the radiative quantum yield (with respect to luciferin) increased 5.7-fold from 5.3% (blue pathway) to 30% (green pathway). The fluorescence quantum yield of the Renilla GFP was 30%; thus, the in vitro energy transfer efficiency was 100%.

IT 50909-85-8  
 RL: BIOL (Biological study)  
 (fluorescent protein sensitization of)  
 RN 50909-85-8 CAPLUS  
 CN Benzeneacetamide, N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI)  
 (CA INDEX NAME)

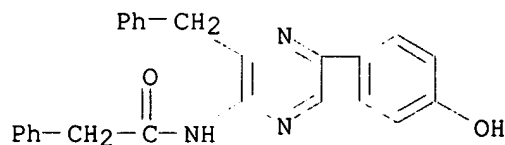


L24 ANSWER 119 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1975:439137 CAPLUS  
 DOCUMENT NUMBER: 83:39137  
 TITLE: Bioluminescence of Renilla reniformis. XV. Renilla luciferin as the substrate for calcium induced photoprotein bioluminescence. Assignment of luciferin tautomers in aequorin and mnemiopsin  
 AUTHOR(S): Hori, Kazuo; Anderson, James Michael; Ward, William W.; Cormier, Milton J.  
 CORPORATE SOURCE: Dep. Biochem., Univ. Georgia, Athens, Ga., USA  
 SOURCE: Biochemistry (1975), 14(11), 2371-6  
 CODEN: BICHAW  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB A study was made of the effects of pH and protic and aprotic solvents on the spectral properties of Renilla (sea pansy) luciferin and a no. of its analogs. The results made possible the assignment of 2 tautomeric forms of Renilla luciferin, one which absorbs max. at 435 nm and another which exhibits an absorption max. at 454 nm. Furthermore the results provide an explanation for the visible absorption characteristics of the photoproteins aequorin ( $\lambda_{\text{max}}$  454 nm) and mnemiopsin ( $\lambda_{\text{max}}$  435 nm). In addn. a Renilla-like luciferin was extd. from both of these photoproteins. This luciferin produces light with Renilla luciferase, at a rate dependent upon the concn. of dissolved O, and in other respects is indistinguishable from Renilla luciferin in this bioluminescent reaction. Apparently, the native chromophore in both photoproteins is Renilla luciferin (or a nearly identical deriv.). Also, a hydroperoxide intermediate probably exists in photoproteins, on energetic grounds, and to account for the O concn. independency of the rate of photoprotein reactions. This hydroperoxide may be attached initially to an amino acid side chain (possibly indolyl-OOH, imidazolyl-OOH, or -SOOH) rather than to the luciferin chromophore.

IT 50909-85-8  
 RL: PRP (Properties)  
 (tautomers and uv-visible spectrum of, aequorin and mnemiopsin in relation to)  
 RN 50909-85-8 CAPLUS  
 CN Benzeneacetamide, N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI)

(CA INDEX NAME)



L24 ANSWER 120 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1975:405600 CAPLUS

DOCUMENT NUMBER: 83:5600

TITLE: Chemical nature of bioluminescence systems in coelenterates

AUTHOR(S): Shimomura, Osamu; Johnson, Frank H.

CORPORATE SOURCE: Dep. Biol., Princeton Univ., Princeton, N. J., USA

SOURCE: Proc. Natl. Acad. Sci. U. S. A. (1975), 72(4), 1546-9  
CODEN: PNASA6

DOCUMENT TYPE: Journal

LANGUAGE: English

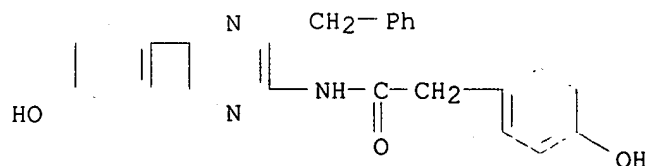
AB Anal. of substances involved in light-emitting reactions among bioluminescent coelenterates revealed a pronounced uniformity in the structural features of initial reactants, i.e., luciferins and photoprotein chromophores, as well as the light-emitter product. This product is structurally identical among the different classes of coelenterates; i.e., Hydrozoa (the jellyfish, Aequorea), Anthozoa (the sea cactus, Cavernularia; sea pansy, Renilla; and sea pen, Leiophtilus), and very likely also the Scyphozoa (the jellyfish, Pelagia). In each of these instances the reaction product, 2-(p-hydroxyphenylacetyl)amino-3-benzyl-5-(p-hydroxyphenyl) pyrazine, is the actual light-emitter, whether it occurs in a Ca<sup>2+</sup>-triggered photoprotein type of luminescence or in a luciferin-luciferase type. The evidence indicates that in certain coelenterates, e.g., Cavernularia, these 2 types are equally significant, whereas in others (Renilla and Leiophtilus) the luciferin-luciferase type predominates over the Ca-triggerable photoprotein type. Only the photoprotein type functions in the luciferaseless jellyfish, Aequorea. In all instances investigated, the structure of the light-emitter prior to the luminescence reaction appears to be essentially the same as that of the chromophore of unreacted aequorin. The product of the luminescence reaction is absent in exts. of nonluminous species. However, a product very similar to that of luminescent coelenterates occurs also in representatives of other phyla, including the cephalopod molluscs, e.g., the "firefly squid" Watasenia and probably various ctenophores as well.

IT 50611-86-4

RL: BIOL (Biological study)  
(in bioluminescence, in coelenterates)

RN 50611-86-4 CAPLUS

CN Benzeneacetamide, 4-hydroxy-N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)

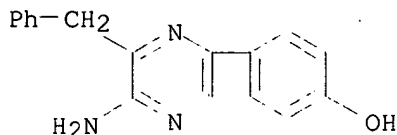


IT 37156-84-6

RL: BIOL (Biological study)  
(in calcium-induced luminescence of coelenterates)

RN 37156-84-6 CAPLUS

CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



L24 ANSWER 121 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1975:152422 CAPLUS

DOCUMENT NUMBER: 82:152422

TITLE: Light-emitter in the bioluminescence of the sea cactus  
Cavernularia obesa

AUTHOR(S): Shimomura, Osamu; Inoue, Shoji; Goto, Toshio

CORPORATE SOURCE: Biol. Dep., Princeton Univ., Princeton, N. J., USA

SOURCE: Chem. Lett. (1975), (3), 247-8

CODEN: CMLTAG

DOCUMENT TYPE: Journal

LANGUAGE: English

GI For diagram(s), see printed CA Issue.

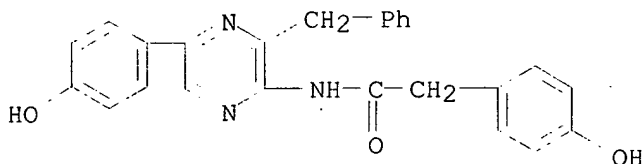
AB The light-emitter extd. from C. obesa was 2-(p-hydroxyphenylacetamido)-3-benzyl-5-(p-hydroxyphenyl)pyrazine (I). This result strongly suggested a structure for coelenterate luciferyl sulfate.

IT 50611-86-4

RL: BIOL (Biological study)  
(of coelenterate, bioluminescence in relation to)

RN 50611-86-4 CAPLUS

CN Benzeneacetamide, 4-hydroxy-N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



L24 ANSWER 122 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1975:428185 CAPLUS

DOCUMENT NUMBER: 83:28185

TITLE: Squid bioluminescence. II. Isolation from Watasenia  
scintillans and synthesis of 2-(p-hydroxybenzyl)-6-(p-  
hydroxyphenyl)-3,7-dihydroimidazo[1,2-a]pyrazin-3-oneAUTHOR(S): Inoue, Shoji; Sugiura, Sumi; Kakoi, Hisae; Hasizume,  
Kiyomatsu; Goto, Toshio; Iio, Hideo

CORPORATE SOURCE: Fac. Pharm., Meijo Univ., Nagoya, Japan

SOURCE: Chem. Lett. (1975), (2), 141-4

CODEN: CMLTAG

DOCUMENT TYPE: Journal

LANGUAGE: English

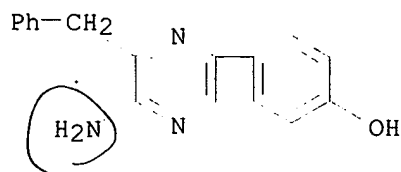
GI For diagram(s), see printed CA Issue.

AB 2-(p-hydroxybenzyl)-6-(p-hydroxyphenyl)-3,7-dihydroimidazo[1,2-a]pyrazin-3-one (I) was isolated from the squid, *Watasenia scintillans*. I was prepd. from p-MeCO<sub>2</sub>C<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>COCHO and 2-amino-3-benzyl-5-(p-hydroxyphenyl)pyrazine. I is considered to be a precursor of hitherto unknown *Watasenia* luciferin or photoprotein.

IT **37156-84-6**  
 RL: RCT (Reactant)  
 (reaction of, with p-acetoxymethylglycol)

RN 37156-84-6 CAPLUS

CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



L24 ANSWER 123 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1974:569508 CAPLUS

DOCUMENT NUMBER: 81:169508

TITLE: Squid bioluminescence. I. Structure of *Watasenia* oxyluciferin, a possible light-emitter in the bioluminescence of *Watasenia scintillans*

AUTHOR(S): Goto, Toshio; Iio, Hideo; Inoue, Shoji; Kakoi, Hisae

CORPORATE SOURCE: Dep. Agric., Nagoya Univ., Nagoya, Japan

SOURCE: Tetrahedron Lett. (1974), (26), 2321-4  
 CODEN: TELEAY

DOCUMENT TYPE: Journal

LANGUAGE: English

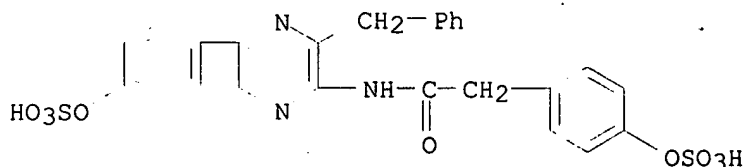
GI For diagram(s), see printed CA Issue.

AB The structures of the *Watasenia* oxyluciferin I and a second light emitter II from *W. scintillans* were detd. from chem. and spectral data.

IT **54028-46-5P 54028-47-6P**  
 RL: PREP (Preparation)  
 (from *Watasenia scintillans*, mol. structure of)

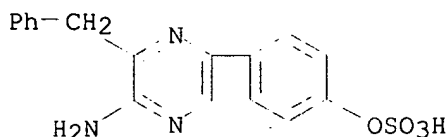
RN 54028-46-5 CAPLUS

CN Benzeneacetamide, N-[3-(phenylmethyl)-5-[4-(sulfooxy)phenyl]pyrazinyl]-4-(sulfooxy)- (9CI) (CA INDEX NAME)



RN 54028-47-6 CAPLUS

CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]-, hydrogen sulfate (ester) (9CI) (CA INDEX NAME)

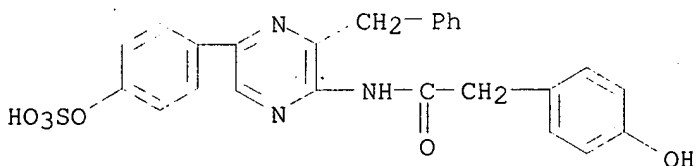


IT 54028-48-7P 54028-49-8P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

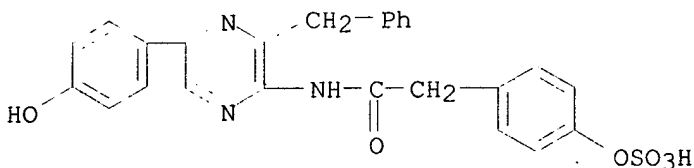
RN 54028-48-7 CAPLUS

CN Benzeneacetamide, 4-hydroxy-N-[3-(phenylmethyl)-5-[4-(sulfooxy)phenyl]pyrazinyl]- (9CI) (CA INDEX NAME)



RN 54028-49-8 CAPLUS

CN Benzeneacetamide, N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]-4-(sulfooxy)- (9CI) (CA INDEX NAME)



L24 ANSWER 124 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1973:537092 CAPLUS

DOCUMENT NUMBER: 79:137092

TITLE: Pteridines. XXIX. Unequivocal route to 2,4-diamino-6-substituted pteridines

AUTHOR(S): Taylor, Edward C.; Perlman, Katherine L.; Kim, Young-Ho; Sword, Ian P.; Jacobi, Peter A.

CORPORATE SOURCE: Dep. Chem., Princeton Univ., Princeton, N. J., USA

SOURCE: J. Amer. Chem. Soc. (1973), 95(19), 6413-18

CODEN: JACSAT

DOCUMENT TYPE: Journal

LANGUAGE: English

GI For diagram(s), see printed CA Issue.

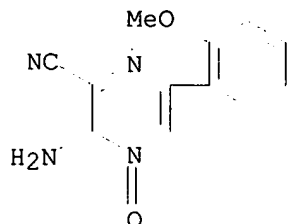
AB 2,4-Diamino-6-substituted pteridines (I) are prepd. Reaction of an .alpha.-keto-aldoxime with aminomalononitrile gives 2-amino-3-cyano-5-substituted pyrazine 1-oxides which yield 2,4-diamino-6-substituted pteridine 8-oxides upon cyclization with guanidine. 2,4-Diaminopteridines are then obtained by deoxygenation of the corresponding 8-oxides, or alternately by prior deoxygenation of these pyrazine 1-oxides, followed by cyclization with guanidine. The conversion of 2-amino-3-cyano-5-methylpyrazine 1-oxide to the corresponding 1,4-dioxide, and a no. of chem. transformations of this latter intermediate, are also described.

IT 50627-21-9

RL: RCT (Reactant)  
(cyclization of, diaminopteridine from)

RN 50627-21-9 CAPLUS

CN Pyrazinecarbonitrile, 3-amino-6-(2-methoxyphenyl)-, 4-oxide (9CI) (CA  
INDEX NAME)



L24 ANSWER 125 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1974:890 CAPLUS

DOCUMENT NUMBER: 80:890

TITLE: Bioluminescence of *Renilla reniformis*. XIII.  
Identification of the product excited states during  
the chemiluminescent and bioluminescent oxidation of  
*Renilla* (sea pansy) luciferin and certain of its  
analogues

AUTHOR(S): Hori, Kazuo; Wampler, John E.; Matthews, John C.;  
Cormier, Milton J.

CORPORATE SOURCE: Dep. Biochem., Univ. Georgia, Athens, Ga., USA

SOURCE: Biochemistry (1973), 12(22), 4463-8

CODEN: BICHAW

DOCUMENT TYPE: Journal

LANGUAGE: English

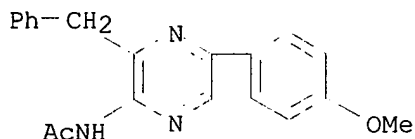
AB A *Renilla* luciferin, 3,7-dihydro-2-benzyl-6-(p-hydroxyphenyl)-8-benzylimidazo[1,2- $\alpha$ ]pyrazin-3-one, which has an activity equal to that of native luciferin in producing light with *Renilla* luciferase. It reacted with luciferase to produce the same color of light with the same quantum yield as that produced by native luciferin. Both the synthetic and the native compds. produced a bluish chemiluminescence when dissolved in dimethylformamide. Oxygen was required for this chemiluminescence, and CO<sub>2</sub> and oxyluciferin were the products. The structure of the latter compd. was confirmed by synthesis. Detailed examn. of the chemiluminescence and fluorescence emission data of synthetic luciferin, synthetic oxyluciferin, and a no. of synthetic analogs of each provided evidence that the monoanion of oxyluciferin represents the electronic excited state responsible for the emission during chemiluminescence. The bioluminescent oxidn. of luciferin by luciferase and O leads to the formation of CO<sub>2</sub> and oxyluciferin. The bioluminescence emission may arise from the electronic excited state of the oxyluciferin monoanion. Apparently, the *Renilla* luciferin or a structure very similar to it is involved in the bioluminescence of all coelenterates that have been carefully examd. including the jellyfish *Aequorea* and the products of those bioluminescent reactions are analogous to, if not identical with, those reported here.

IT 49842-01-5P 50909-84-7P 50909-85-8P

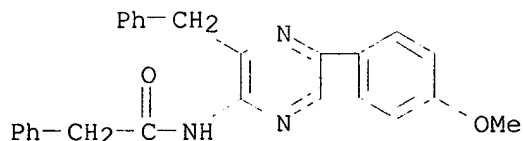
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and chemiluminescence of)

RN 49842-01-5 CAPLUS

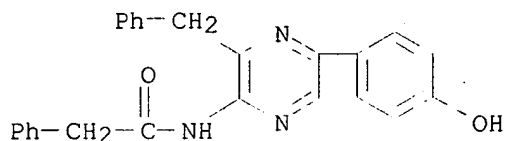
CN Acetamide, N-[5-(4-methoxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA  
INDEX NAME)



RN 50909-84-7 CAPLUS

CN Benzeneacetamide, N-[5-(4-methoxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI)  
(CA INDEX NAME)

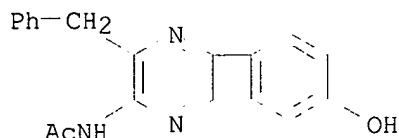
RN 50909-85-8 CAPLUS

CN Benzeneacetamide, N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI)  
(CA INDEX NAME)

IT 49842-00-4P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

RN 49842-00-4 CAPLUS

CN Acetamide, N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA  
INDEX NAME)

L24 ANSWER 126 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1973:546485 CAPLUS

DOCUMENT NUMBER: 79:146485

TITLE: Chemical nature of the light emitter in  
bioluminescence of Aequorin

AUTHOR(S): Shimomura, Osamu; Johnson, Frank H.

CORPORATE SOURCE: Biol. Dep., Princeton Univ., Princeton, N. J., USA

SOURCE: Tetrahedron Lett. (1973), (31), 2963-6

CODEN: TELEAY

DOCUMENT TYPE: Journal

LANGUAGE: English

GI For diagram(s), see printed CA Issue.

AB The light emitter in the bioluminescence of aequorin was an excited state

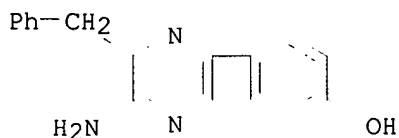
of the substituted AF-350 (I, R = p-HOC6H4CH2CO) (II) which was prepd. from the product blue fluorescent protein by treatment with 1N HCl. II was identified from spectral data and its hydrolysis products, and prepd. by heating AF-350 (I, R = H) with p-HOC6H4CH2CO2H.

IT 37156-84-6

RL: RCT (Reactant)  
(acylation of)

RN 37156-84-6 CAPLUS

CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)

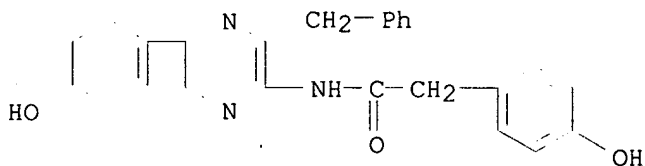


IT 50611-86-4

RL: RCT (Reactant)  
(as light emitter in bioluminescence of aequorin)

RN 50611-86-4 CAPLUS

CN Benzeneacetamide, 4-hydroxy-N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)

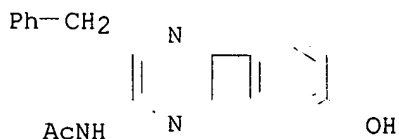


IT 49842-00-4P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

RN 49842-00-4 CAPLUS

CN Acetamide, N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



L24 ANSWER 127 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1973:526449 CAPLUS

DOCUMENT NUMBER: 79:126449

TITLE: Chemiluminescence of Renilla (sea pansy) luciferin and its analogs

AUTHOR(S): Hori, Kazuo; Wampler, John E.; Cormier, Milton J.

CORPORATE SOURCE: Dep. Biochem., Univ. Ga., Athens, Ga., USA

SOURCE: J. Chem. Soc., Chem. Commun. (1973), (14), 492-3

CODEN: JCCCAT

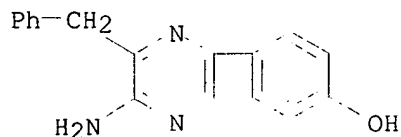
DOCUMENT TYPE: Journal

LANGUAGE: English

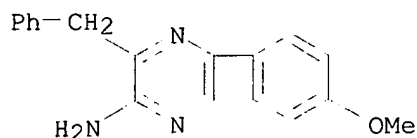
Searched by Barb O'Bryen, STIC 308-4291



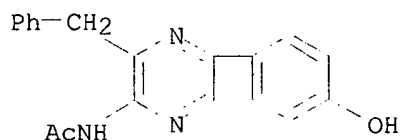
GI For diagram(s), see printed CA Issue.  
 AB Renilla luciferin analogs (I, R = H, Me) gave a brilliant blue chemiluminescence when dissolved in DMF contg. O<sub>2</sub>, and formed the (acetamido)pyrazines (II, R = H, Me) and CO<sub>2</sub>. The excited states responsible for the luminescence were anions of II. Renilla luciferin gave a chemiluminescence similar to that of I (R = H).  
 IT 37156-84-6 40040-81-1  
 RL: RCT (Reactant)  
 (acetylation of)  
 RN 37156-84-6 CAPLUS  
 CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



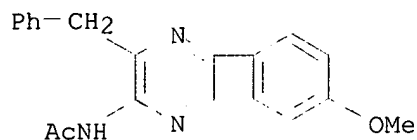
RN 40040-81-1 CAPLUS  
 CN Pyrazinamine, 5-(4-methoxyphenyl)-3-(phenylmethyl)- (9CI) (CA INDEX NAME)



IT 49842-00-4P 49842-01-5P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)  
 RN 49842-00-4 CAPLUS  
 CN Acetamide, N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



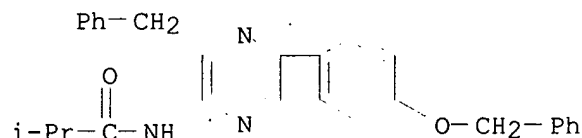
RN 49842-01-5 CAPLUS  
 CN Acetamide, N-[5-(4-methoxyphenyl)-3-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



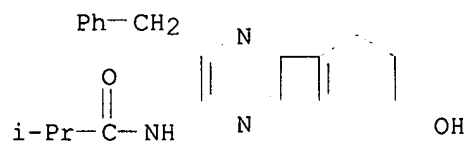
L24 ANSWER 128 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1973:525387 CAPLUS

Searched by Barb O'Bryen, STIC 308-4291

DOCUMENT NUMBER: 79:125387  
 TITLE: Bioluminescence of coelenterates. Chemiluminescent model compounds  
 AUTHOR(S): McCapra, Frank; Manning, M. J.  
 CORPORATE SOURCE: Sch. Mol. Sci., Univ. Sussex, Brighton, Engl.  
 SOURCE: J. Chem. Soc., Chem. Commun. (1973), (14), 467-8  
 CODEN: JCCCAT  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI For diagram(s), see printed CA Issue.  
 AB Chemiluminescence spectra in the oxidn. of imidazopyrazines (I, R = Me, R1 = PhCH2O, HO, H; R = R1 = H), which are related to the luciferins from certain coelenterates, were detd. The oxidns. gave the fluorescent compds. (II). A common path to the different bioluminescent emissions of the coelenterates is indicated.  
 IT 49784-80-7P 49784-81-8P  
 RL: SPN (Synthetic preparation); PREP (Preparation) (prepn. of)  
 RN 49784-80-7 CAPLUS  
 CN Propanamide, 2-methyl-N-[5-[4-(phenylmethoxy)phenyl]-3-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



RN 49784-81-8 CAPLUS  
 CN Propanamide, N-[5-(4-hydroxyphenyl)-3-(phenylmethyl)pyrazinyl]-2-methyl- (9CI) (CA INDEX NAME)



L24 ANSWER 129 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1973:72065 CAPLUS  
 DOCUMENT NUMBER: 78:72065  
 TITLE: Bioluminescence of Renilla reniformis. XII. Structure and chemical synthesis of a biologically active form of Renilla (sea pansy) luciferin  
 AUTHOR(S): Hori, Kazuo; Cormier, Milton J.  
 CORPORATE SOURCE: Dep. Biochem., Univ. Georgia, Athens, Ga., USA  
 SOURCE: Proc. Nat. Acad. Sci. U. S. A. (1973), 70(1), 120-3  
 CODEN: PNASA6  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI For diagram(s), see printed CA Issue.  
 AB The structure of a biol. active form of Renilla (sea pansy) luciferin was elucidated; this structure, confirmed by total synthesis, is 3,7-dihydro-2-methyl-6-(p-hydroxyphenyl)-8-benzylimidazo[1,2-a]pyrazin-3-one (I). In the natural compd., the Me group at the 2 position is replaced by an unknown, more complex group. For this reason the synthetic

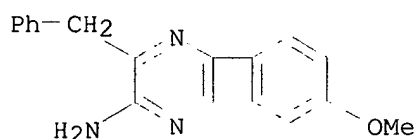
I is 10% as active as the natural compd. in producing light with Renilla luciferase. However, the spectral properties of the two are identical. The rates of the luminescent reaction with both are similar, and the color of the light produced is identical in each case.

IT 40040-81-1

RL: RCT (Reactant)  
(reaction of, with methylglyoxal)

RN 40040-81-1 CAPLUS

CN Pyrazinamine, 5-(4-methoxyphenyl)-3-(phenylmethyl)- (9CI) (CA INDEX NAME)

~~L24~~ ANSWER 130 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1972:498944 CAPLUS

DOCUMENT NUMBER: 77:98944

TITLE: Structure confirmation of the light-emitting moiety of bioluminescent jellyfish Aequorea

AUTHOR(S): Kishi, Yoshito; Tanino, Hideo; Goto, Toshio

CORPORATE SOURCE: Dep. Agric. Chem., Nagoya Univ., Nagoya, Japan

SOURCE: Tetrahedron Lett. (1972), (27), 2747-8

CODEN: TELEAY

DOCUMENT TYPE: Journal

LANGUAGE: English

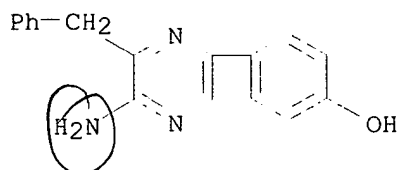
AB Synthesis of 2-amino-3-benzyl-5-(4'-hydroxyphenyl)pyrazine and the identification of the synthesized material with AF-350, the single chromophore of the photoprotein of the bioluminescent jellyfish Aequorea, are described.

IT 37156-84-6

RL: BIOL (Biological study)  
(in jellyfish luminescence)

RN 37156-84-6 CAPLUS

CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)

~~L24~~ ANSWER 131 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1972:402117 CAPLUS

DOCUMENT NUMBER: 77:2117

TITLE: Structure of the light-emitting moiety of aequorin

AUTHOR(S): Shimomura, Osamu; Johnson, Frank H.

CORPORATE SOURCE: Dep. Biol., Princeton Univ., Princeton, N. J., USA

SOURCE: Biochemistry (1972), 11(9), 1602-8

CODEN: BICHAW

DOCUMENT TYPE: Journal

LANGUAGE: English

AB From 125 mg of disc electrophoretically pure aequorin extd. from 2 tons

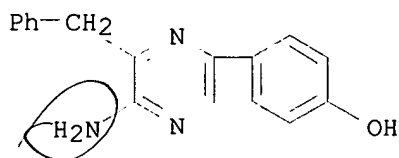
of the jellyfish Aequorea, the light-emitting moiety in the bioluminescence reaction was sepd. as 1 mg of a substance designated AF-350 (mol. wt. 277). The properties of AF-350, including uv and ir absorption, NMR, and mass spectra, pKa values, and products of deuteration, acetylation, hydrogenation, and hydrolysis indicate that the structure of AF-350 is most likely 2-amino-3-benzyl 5-(p-hydroxyphenyl)pyrazine. This structure has further support through comparison with model compds., namely, Cypridina etioluciferin and etioluciferamine. The AF-350 moiety is probably bound to the protein through the amidine part of the pyrazine ring, rather than through the phenolic hydroxyl.

IT 37156-84-6

RL: BIOL (Biological study)  
(aequorin bioluminescing moiety)

RN 37156-84-6 CAPLUS

CN Phenol, 4-[5-amino-6-(phenylmethyl)pyrazinyl]- (9CI) (CA INDEX NAME)



L24 ANSWER 132 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1972:99618 CAPLUS

DOCUMENT NUMBER: 76:99618

TITLE: Pyrazines. I. Syntheses of 2,3-dihydroxypyrazines and their derivatives

AUTHOR(S): Adachi, Jiro; Sato, Nobuhiro

CORPORATE SOURCE: Dep. Chem., Yokohama City Univ., Yokohama, Japan

SOURCE: J. Org. Chem. (1972), 37(2), 221-5

CODEN: JOCEAH

DOCUMENT TYPE: Journal

LANGUAGE: English

GI For diagram(s), see printed CA Issue.

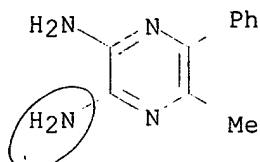
AB ,3-Dihydroxypyrazines I contg. (a) H, H, (b) H, Me, (c) Me, Me, (d) H, Ph, (e) Me, Ph, and (f) Ph, Ph, at 5,6-positions were prepd. As starting materials, five amino ketals IIb-f were prepd. by two steps from phthalimido ketones. II, R1 = R2 = H (a); R1 = H, R2 = Me (b), and II, R1 = H, R2 = Ph (d) were readily condensed with ethyl oxamate to provide oxamoyl amino ketals III in good yields, although condensations of amino ketals II, R1 = R2 = Me (c); R1 = Me, R2 = Ph (e) and II, R1 = R2 = Ph (f) which were sterically crowded with methyl or phenyl groups, with ethyl oxamate required drastic conditions. The subsequent cyclizations of oxamoyl amino ketals IIIa, IIIb, and IIIc in AcOH proceeded in excellent yields to 2,3-dihydroxypyrazines Ia, Ib, and Ic, resp. While a steric hindrance due to the substituents was recognized, cyclizations of IIId, IIIe and IIIf in AcOH in the presence of p-toluenesulfonic acid provided the corresponding 2,3-dihydroxypyrazines in 50-60% yields. The structures of these 2,3-dihydroxypyrazines were established by conversion to 2,3-dichloropyrazines and subsequently 2,3-diaminopyrazines.

IT 32493-84-8P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

RN 32493-84-8 CAPLUS

CN 2,3-Pyrazinediamine, 5-methyl-6-phenyl- (9CI) (CA INDEX NAME)



124 ANSWER 133 OF 145 CAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1968:427459 CAPLUS  
 DOCUMENT NUMBER: 69:27459  
 TITLE: 3-amino-6-substituted-pyrazinoyl guanidines  
 INVENTOR(S): Cragoe, Edward J., Jr.  
 PATENT ASSIGNEE(S): Merck and Co., Inc.  
 SOURCE: U.S., 9 pp. Continuation-in-part of U.S. 3313813  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3360517		19671226	US	19640331

GI For diagram(s), see printed CA Issue.  
 AB Continuation-in-part of U.S. 3,313,813. The title compds. (I) which possess diuretic and natriuretic properties, were prepd. by treating II (R = alkoxy) with a guanidine or by treating II (R = OH) with a lower alkanolic acid anhydride to give III, which was treated with a guanidine and the product hydrolyzed. Thus, 52.5 g. aminomalonamidamide-di-HCl was added to an ice cold soln. of 28.8 g. ethylglyoxal in 450 ml. H<sub>2</sub>O, .apprx.65 ml. concd. NH<sub>4</sub>OH soln. added and the basic soln. kept 20 hrs. at room temp. to give 17.5 g. II (R<sub>1</sub> = Et, X = H, R<sub>2</sub> = NH<sub>2</sub>), m. 160-7.degree. (iso-PrOH). A mixt. of 24.4 g. of this and 200 ml. 10% NaOH was stirred on a steam bath 30 min. and worked up to give 22.8 g. II (R<sub>1</sub> = Et, R<sub>2</sub> = OH, X = H) m. 149-52.degree.. A soln. of 14 g. of this in 160 ml. 33% HCl in MeOH was stirred 24 hrs. at room temp. and worked up to give 4.3 g. II (R<sub>1</sub> = Et, R<sub>2</sub> = OMe, X = H) m. 85-7.5.degree. (iso-PrOH). A mixt. of 5.8 g. guanidine-HCl and a soln. of 1.1 g. Na in 30 ml. MeOH was concd. in vacuo to a sirup, 0.012 mole of the above ester added, and the mixt. heated 20 min. on a steam bath and worked up to give 53% I (R<sub>1</sub> = Et, R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> = X = H) m. 207-9.degree. (decompn.). A mixt. of 31 g. II (R<sub>1</sub> = Me, R<sub>2</sub> = NH<sub>2</sub>, X = H) and 320 ml. 10% NaOH was heated 30 min. on a steam bath to give 25 g. of the acid Na salt. A mixt. of 97 g. of the Na salt, 77 g. Me<sub>2</sub>SO<sub>4</sub>, and 700 ml. MeOH was stirred 19 hrs. at room temp. to give 18 g. II (R<sub>1</sub> = Me, R<sub>2</sub> = OMe, X = H) m. 138-40.degree.. Treatment of the ester with guanidine-HCl as before gave 87% I (R<sub>1</sub> = Me, R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> = X = H), m. 218-19.degree. (decompn.). The following were similarly prepd.: II (R<sub>1</sub> = cyclohexyl, R<sub>2</sub> = NH<sub>2</sub>, X = H); II (R<sub>1</sub> = cyclohexyl, R<sub>2</sub> = OH, X = H); II (R<sub>1</sub> = cyclohexyl, R<sub>2</sub> = OMe, X = H), m. 126.5-8.0.degree.; 61% I (R<sub>1</sub> = cyclohexyl, R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> = X = H), m. 228-30.degree.; II (R<sub>1</sub> = cyclopropyl, R<sub>2</sub> = NH<sub>2</sub>, X = H), m. 185.5-7.5.degree.; II (R<sub>1</sub> = cyclopropyl, R<sub>2</sub> = OH, X = H) m. 169-72.degree.; II (R<sub>1</sub> = cyclopropyl, R<sub>2</sub> = OMe, X = H), m. 112.5-4.5.degree.; 61% I (R<sub>1</sub> = cyclopropyl, R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> = X = H), m. 196.5-9.0.degree. (decompn.); II (R<sub>1</sub> = Ph, R<sub>2</sub> = OMe, X = H), m. 140-1.degree.; 34% I (R<sub>1</sub> = Ph, R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> = X = H), m. 194.5-5.5.degree.; II (R<sub>1</sub> = PhCH<sub>2</sub>CH<sub>2</sub>, R<sub>2</sub> = OH, X = H); II (R<sub>1</sub> = PhCH<sub>2</sub>CH<sub>2</sub>, R<sub>2</sub> = OMe, X = H); II (R<sub>1</sub> = p-ClC<sub>6</sub>H<sub>4</sub>, R<sub>2</sub> = NH<sub>2</sub>, X = H); II (R<sub>1</sub> = p-ClC<sub>6</sub>H<sub>4</sub>, R<sub>2</sub> = OH, X = H) m. 207-13.degree.; II (R<sub>1</sub> = p-ClC<sub>6</sub>H<sub>4</sub>, R<sub>2</sub> = OMe, X = H), m. 181.5-3.5.degree.; and 70% I (R<sub>1</sub> = p-ClC<sub>6</sub>H<sub>4</sub>, R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> = X = H), m. 282-5.degree. (decompn.). With vigorous stirring, .apprx.140 g. Cl was

passed through a soln. just <40.degree. of 3180 ml. H<sub>2</sub>O, 750 ml. HOAc, and 90 g. II (R<sub>1</sub> = X = H, R<sub>2</sub> = OMe) 25 min. to give II (R<sub>1</sub> = Cl, R<sub>2</sub> = OMe, X = Cl), m. 142.degree. (decompn.), which on stirring at 25.degree. with 150 g. NaHSO<sub>3</sub> in 900 ml. H<sub>2</sub>O gave 55% II (R<sub>1</sub> = Cl, R<sub>2</sub> = OMe, X = H), m. 159-61.degree.. A soln. of 18.8 g. of this, 15 g. PhNH<sub>2</sub>, 2.5 ml. concd. HCl, and 150 ml. MeOAc was refluxed 16 hrs. to give 7.4 g. II (R<sub>1</sub> = anilino, R<sub>2</sub> = OMe, NHX = isopropylidenamino), m. 193.5-7.5.degree.. Treatment of the ester with guanidine hydrochloride gave 35% I (R<sub>1</sub> = anilino, R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> = H, NHX = isopropylidenamino) m. 214-16.degree. (decompn.). A mixt. of 300 g. II (R<sub>1</sub> = Cl, R<sub>2</sub> = OMe, X = H) and 2 l. concd. NH<sub>4</sub>OH was stirred 16 hrs. at room temp. to give 260 g. II (R<sub>1</sub> = Cl, R<sub>2</sub> = NH<sub>2</sub>, X = H), m. 227-30.degree.. A mixt. of 3.3 g. of this amide, 200 ml. Ac<sub>2</sub>O, and 200 ml. (EtO)<sub>3</sub>CH was refluxed 1.5 hrs. to give 20 g. IV (R<sub>1</sub> = Cl, R<sub>2</sub> = H) m. 268-70.degree. (decompn.). A soln. of 5.5 g. IV (R<sub>1</sub> = Cl, R<sub>2</sub> = H) and 4.4 g. benzyl mercaptan in 4% NaOH was heated 30 min. on a steam bath to give 5.5 g. IV (R<sub>1</sub> = PhCH<sub>2</sub>S, R<sub>2</sub> = H), m. 233-5.degree. (iso-PrOH). A soln. of 42.2 g. IV (R<sub>1</sub> = PhCH<sub>2</sub>S, R<sub>2</sub> = H) in 600 ml. 5% NaOH was heated 8 hrs. on a steam bath to give 23 g. II (R<sub>1</sub> = PhCH<sub>2</sub>S, R<sub>2</sub> = OH, X = H), m. 127-39.degree.. A soln. of 8.5 g. of this acid in 50 ml. Ac<sub>2</sub>O was heated 5 hrs. on a steam bath to give 6.6 g. III (R<sub>1</sub> = PhCH<sub>2</sub>S, R<sub>2</sub> = Me), m. 116.5-18.5.degree. (C<sub>6</sub>H<sub>6</sub>). To a soln. of 1.0 g. Na in 30 ml. iso-PrOH was added 5 g. guanidine-HCl and 3.4 g. III (R<sub>1</sub> = PhCH<sub>2</sub>S, R<sub>2</sub> = Me), and the mixt. kept 1 hr. at room temp. to give 1.1 g. I (R<sub>1</sub> = PhCH<sub>2</sub>S, R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> = X = H), m. 171-3.degree. (aq. iso-PrOH). Similarly prepd. were: IV (R<sub>1</sub> = MeS, R<sub>2</sub> = H), m. 289.5-91.5.degree.; II (R<sub>1</sub> = MeS, R<sub>2</sub> = OH, X = OH), m. 182-4.degree. (decompn.); III (R<sub>1</sub> = MeS, R<sub>2</sub> = Me), m. 189-91.degree.; 68% I (R<sub>1</sub> = MeS, R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> = H, X = Ac), m. 220-2.degree.; and 86% I (R<sub>1</sub> = MeS, R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> = X = H) m. 203-5.degree.. A soln. of 1.05 g. KMnO<sub>4</sub> in 35 ml. H<sub>2</sub>O was added to a soln. of 0.92 g. II (R<sub>1</sub> = MeS, R<sub>2</sub> = OH, X = H) and 15 ml. of a 2.5% NaOH soln. to give 0.5 g. II (R<sub>1</sub> = MeSO<sub>2</sub>, R<sub>2</sub> = OH, X = H), m. 239-42.degree. (decompn.). Also prepd. were: III (R<sub>1</sub> = MeSO<sub>2</sub>, R<sub>2</sub> = Me), m. 214-16.degree.; 27% I (R<sub>1</sub> = MeSO<sub>2</sub>, R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> = X = H), m. 224-6.degree. (decompn.); II (R<sub>1</sub> = PhCH<sub>2</sub>SO<sub>2</sub>, R<sub>2</sub> = OH, X = H); III (R<sub>1</sub> = PhCH<sub>2</sub>SO<sub>2</sub>, R<sub>2</sub> = Me); I (R<sub>1</sub> = PhCH<sub>2</sub>SO<sub>2</sub>, R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> = X = H); IV (R<sub>1</sub> = MeO, R<sub>2</sub> = Me), m. 232-4.degree.; III (R<sub>1</sub> = MeO, R<sub>2</sub> = Me), m. 190-2.degree.; 92% I (R<sub>1</sub> = MeO, R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> = H, X = Ac) (as nitrate, m. 225-9.degree.); I (R<sub>1</sub> = MeO, R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> = X = H); II (R<sub>1</sub> = Cl, R<sub>2</sub> = NH<sub>2</sub>, X = Me), m. 152.5-4.5.degree.; IV (R<sub>1</sub> = Cl, R<sub>2</sub> = Me), m. 217.5-19.5.degree.; IV (R<sub>1</sub> = NMe<sub>2</sub>, R<sub>2</sub> = Me), m. 256-8.degree.; II (R<sub>1</sub> = NMe<sub>2</sub>, R<sub>2</sub> = OH, X = H), m. 164.5-5.5.degree.; III (R<sub>1</sub> = NMe<sub>2</sub>, R<sub>2</sub> = Me), m. 212.degree. (decompn.); I (R<sub>1</sub> = NMe<sub>2</sub>, R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> = H, X = Ac) [as nitrate, m. 236.5.degree. (decompn.)]; I (R<sub>1</sub> = NMe<sub>2</sub>, R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> = X = H), m. 196.5.degree. (decompn.); IV (R<sub>1</sub> = isopropylamino, R<sub>2</sub> = Me); II (R<sub>1</sub> = isopropylamino, R<sub>2</sub> = OH, X = H) Na salt; III (R<sub>1</sub> = isopropylamino, R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> = H, X = Ac) [as nitrate, m. 203-5.degree.] (decompn.); I (R<sub>1</sub> = isopropylamino, R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> = X = H); IV (R<sub>1</sub> = PhCH<sub>2</sub>NH, R<sub>2</sub> = Me), m. 212-14.degree.; II (R<sub>1</sub> = PhCH<sub>2</sub>NH, R<sub>2</sub> = OH, X = H), m. 130-2.degree. (decompn.); III (R<sub>1</sub> = PhCH<sub>2</sub>NH, R<sub>2</sub> = Me), m. 168-70.degree.; I (R<sub>1</sub> = PhCH<sub>2</sub>NH, R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> = H, X = Ac) (as nitrate, m. 225-8.degree.); I (R<sub>1</sub> = PhCH<sub>2</sub>, R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> = X = H); IV (R<sub>1</sub> = piperidino, R<sub>2</sub> = Me), m. 207-9.degree.; II (R<sub>1</sub> = piperidino, R<sub>2</sub> = ONa, X = H); III (R<sub>1</sub> = piperidino, R<sub>2</sub> = Me), m. 172-4.degree.; I (R<sub>1</sub> = piperidino, R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> = H, X = Ac) (as nitrate, m. 228.degree.); I (R<sub>1</sub> = piperidino, R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> = X = H); IV (R<sub>1</sub> = MeONH, R<sub>2</sub> = Me), m. 232-4.degree.; II (R<sub>1</sub> = MeONH, R<sub>2</sub> = ONa, X = H); III (R<sub>1</sub> = MeONH, R<sub>2</sub> = Me), m. 190-2.degree.; I (R<sub>1</sub> = MeONH, R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> = H, X = Ac), m. 225.degree. (decompn.); I (R<sub>1</sub> = MeONH, R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> = X = H); I (R<sub>1</sub> = NH<sub>2</sub>, R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> = X = H); I (R<sub>1</sub> = MeNH, R<sub>2</sub> = R<sub>3</sub> = R<sub>4</sub> = X = H); I (R<sub>1</sub> = R<sub>3</sub> = R<sub>4</sub> = Me, R<sub>2</sub> = X = H) I [R<sub>1</sub> = Me, R<sub>2</sub> = X = H, (R<sub>3</sub>R<sub>4</sub> = ) tetramethylene]; I (R<sub>1</sub> = R<sub>2</sub> = R<sub>3</sub> = Me, R<sub>4</sub> = X = H); 2-hydroxyguanidine sulfate, m. 127.5-35.5.degree. (hygroscopic); I.HCl (R<sub>1</sub> = Me, R<sub>2</sub> = R<sub>3</sub> = X = H, R<sub>4</sub> = CH<sub>2</sub>CH<sub>2</sub>OH); I (R<sub>1</sub> = Me, R<sub>2</sub> = R<sub>3</sub> = X, R<sub>4</sub> = Ph);

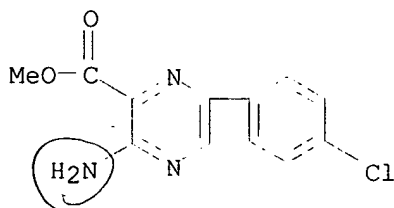
benzylguanidine-HCl, m. 175-8.degree.; and I (R1 = Me, R2 = R3 = X = H, R4 = PhCH2). Examples of a formulation for a dry filled capsule contg. 50 mg. of I.HCl (R1 = Me2N, R2 = R3 = R4 = X = H) as the active ingredient and a combination dosage form in a dry filled capsule contg. 50 mg. I.HCl (R1 = Me, R2 = R3 = R4 = X = H) and 50 mg. hydrochlorothiazide are given.

IT 1148-80-7P 1634-17-9P 1680-39-3P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

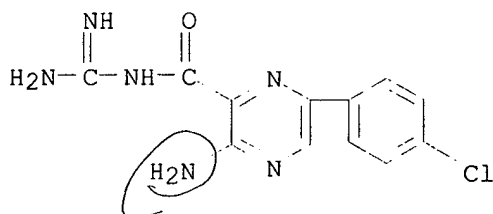
RN 1148-80-7 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-6-(p-chlorophenyl)-, methyl ester (7CI, 8CI) (CA INDEX NAME)



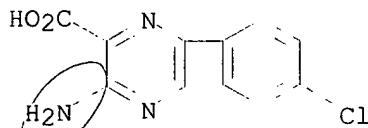
RN 1634-17-9 CAPLUS

CN Pyrazinecarboxamide, 3-amino-N-(aminoiminomethyl)-6-(4-chlorophenyl)- (9CI) (CA INDEX NAME)



RN 1680-39-3 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-6-(p-chlorophenyl)- (7CI, 8CI) (CA INDEX NAME)



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 ACCESSION NUMBER: 1968:436172 CAPLUS  
 DOCUMENT NUMBER: 69:36172  
 TITLE: (3-Amino-2-pyrazinecarbonyl)guanidines  
 INVENTOR(S): Cragoe, Edward J., Jr.  
 PATENT ASSIGNEE(S): Merck and Co., Inc.  
 SOURCE: U.S., 26 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3313813		19670411	US	19621030

GI For diagram(s), see printed CA Issue.

AB Title compds. I are prepd. from II, III, and IV. Thus, 3318 g. SO<sub>2</sub>Cl<sub>2</sub> is added in 30 min. to 765 g. Me 3-amino-2-pyrazinecarboxylate in 5.1 C<sub>6</sub>H<sub>6</sub>; the mixt. is agitated 1 hr., refluxed 5 hrs., and agitated overnight to give 724 g. Me 3-amino-5,6-dichloropyrazinecarboxylate (V), m. 233-4.degree. (MeCN). A mixt. of 100 g. V. and 1.1 Me<sub>2</sub>SO is heated to 65.degree. and NH<sub>3</sub> gas is introduced into the mixt. in 45 min. at 65-70.degree.; the mixt. is cooled to 10.degree. and NH<sub>3</sub> is introduced in 1.25 hrs. to give 91.5% Me 3,5-diamino-6-chloropyrazinecarboxylate, m. 212-13.degree. (MeCN). Also prepd., by known methods are the following II (X, Y, Z, and m.p. given): MeO, NH<sub>2</sub>, H, 252-4.degree. (decompn.); MeO, NH<sub>2</sub>, Br, 217-19.degree.; MeO, NH<sub>2</sub>, iodine, 200-2.degree.; MeO, PhNH, Cl, 171.5-73.degree.; MeO, p-ClC<sub>6</sub>H<sub>4</sub>NH, Cl, 207-8.degree.; MeO, Me<sub>2</sub>N, Cl, 145.5-6.5.degree.; MeO, MeS, Cl, 214-16.degree.; MeO, MeSO, Cl, 237.5-40.5.degree. (decompn.); MeO, OH, Cl, .apprx.245.degree. (decompn.); MeO, OH, H, 220-60.degree. (decompn.); MeO, NH<sub>2</sub>, H, 252-4.degree. (decompn.); MeO, Me<sub>2</sub>N, H, 242.5-3.5.degree.; MeO, MeO, H, 205.5-7.5.degree.; MeO, PhCH<sub>2</sub>NH, H, 157-8.degree.; MeO, MeO, MeO, Cl, 255-7.degree.; MeO, MeS, Cl, 212-14.degree.; MeO, SH, Cl, 207-8.degree. (decompn.); MeO, EtO, Cl, 123-5.degree.; MeO, H, Me, 138.5-40.5.degree.; MeO, Cl, Me, 176.5-9.5.degree.; MeO, Me<sub>2</sub>N, Me, 108.5-10.5.degree.; MeO, Me, H, 165-7.degree.; MeO, Me, Br, 179-81.degree.; NH<sub>2</sub>, H, Et, 165.5-8.5.degree.; OH, H, Et, 149-52.degree.; MeO, H, Et, 85-7.5.degree.; OH, cyclohexyl, H, 182.5-3.5.degree.; MeO, cyclohexyl, H, 173-4.5.degree.; NH<sub>2</sub>, H, cyclohexyl, -, OH, H, cyclohexyl, -, MeO, H, cyclohexyl, 126.5-8.0.degree.; NH<sub>2</sub>, H, cyclopropyl, 185.5-7.5.degree.; OH, H, cyclopropyl, 169-72.degree.; MeO, H, cyclohexyl, 112.5-14.5.degree.; MeO, Ph, H, 231-2.degree.; MeO, H, Ph, 140-1.degree.; MeO, Cl, Ph, 187.5-91.5.degree.; MeO, Ph, Br, 217-21.degree.; OH, H, p-ClC<sub>6</sub>H<sub>4</sub>, 213-15.degree.; MeO, H, p-ClC<sub>6</sub>H<sub>4</sub>, 181.5-3.5.degree.; MeO, Cl, Ph, 187.5-90.5.degree.; MeO, Me<sub>2</sub>N, Ph, 167-9.5.degree.; MeO, H, Cl, 142.degree. (decompn.); MeO, MeHN, Cl, 221-2.degree.; MeO, EtNH, Cl, 149-50.degree.; MeO, PrNH, Cl, 138-40.degree.; MeO, iso-PrNH, Cl, 125.5-6.5.degree.; MeO, CH<sub>2</sub>:CHCH<sub>2</sub>NH, Cl, 105-6.5.degree.; MeO, BuNH, Cl, 140-2.degree.; MeO, sec-BuNH, Cl, 106-8.degree.; MeO, iso-BuNH, Cl, 113.5-15.5.degree.; MeO, tert-BuNH, Cl, 98-108.degree.; MeO, Me(CH<sub>2</sub>)<sub>4</sub>NH, Cl, 100.5-2.5.degree.; MeO, BuCHMeNH, Cl, -, MeO, Et<sub>2</sub>CHNH, Cl, -, MeO, Me(CH<sub>2</sub>)<sub>5</sub>NH, Cl, 72.5-5.5.degree.; MeO, cyclopropylmethylamino, Cl, 132-3.degree.; MeO, cyclopropylamino, Cl, 167-9.degree.; MeO, cyclopentylamino, Cl, 119.5-21.5.degree.; MeO, PhCH<sub>2</sub>NH, Cl, 157-8.degree.; MeO, p-MeC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>NH, Cl, 112.5-14.5.degree.; MeO, o-FC<sub>6</sub>H<sub>4</sub>CHNH, Cl, 171-4.degree.; MeO, p-ClC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>NH, Cl, 136-7.degree.; MeO, PhCH<sub>2</sub>CH<sub>2</sub>NH, Cl, 115-19.degree.; MeO, F<sub>3</sub>CCH<sub>2</sub>NH, Cl, 153-4.degree.; MeO, F<sub>3</sub>CCH<sub>2</sub>CH<sub>2</sub>NH, Cl, 124.5-5.5.degree.; MeO, HOCH<sub>2</sub>CH<sub>2</sub>NH, Cl, 155-7.degree.; MeO, HOCH<sub>2</sub>(CHOH)CH<sub>2</sub>NH, Cl, 172-5.degree.; MeO, H<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>NH, Cl, 265.degree.; MeO, Me<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>NH, Cl, 257.degree.; MeO, 4-pyridylmethylamino, Cl, 95-7.degree.; Me, 2-furylmethylamino, Cl, 148-9.degree.; MeO, MeEtN, Cl, 102-4.degree.; MeO, MePrN, Cl, 83.5-5.5.degree.; MeO, iso-PrMeN, Cl, 75.5-7.5.degree.; MeO, Me(CH<sub>2</sub>:CHCH<sub>2</sub>)N, Cl, 90.5-2.degree.; MeO, MeBun, Cl, 59.5-61.5.degree.; MeO, Et<sub>2</sub>N, Cl, 99-101.degree.; MeO, EtPrN, Cl, -, MeO, iso-PrEtN, Cl, -, MeO, Et(CH<sub>2</sub>:CHCH<sub>2</sub>)N, Cl, -, MeO, EtBun, Cl, 77.5-9.5.degree.; Me, Pr<sub>2</sub>N, Cl, 68.5-71.5.degree.; MeO, PrBuN, Cl, -, MeO, 1-pyrrolidinyl, Cl, 168-71.degree.; MeO, hexamethylenimino, Cl, 109-11.degree.; MeO, 4-methylpiperazino, Cl, 186-8.degree.; MeO, MeNHNH, Cl, 136.5-8.degree.; MeO, Me<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub>O, Cl, 134.5-6.5.degree.; NH<sub>2</sub>, H, Cl, 227-30.degree.; OH, H, MeSO<sub>2</sub>, 239-42.degree. (decompn.).

p-Methylbenzylamine is treated with H<sub>2</sub>NC(:NH)SMe.0.5H<sub>2</sub>SO<sub>4</sub> to give 28%



p-MeC6H4CH2NHC(:NH)NH2.HCl, m. 153-5.degree.. Similarly prepd. are Me(PhCH2)NC(:NH)NH2.HCl, m. 122.5-5.5.degree., and the following RNHC(:NH)NH2.HCl (R and m.p. given): o-ClC6H4CH2, 131-6.degree.; p-ClC6H4CH2, 162.5-4.5.degree.; p-MeOC6H4CH2, 132-7.degree.; 2,4-Me2C6H3CH2, 105-15.degree.; 2,4-Cl2C6H3CH2, 145-8.degree.; 3,4-Cl2C6H3CH2, 153-7.degree.; PhCH2CH2, 135-8.degree.; PhCH2, 175-8.degree.. 5,6-Diaminouracil-HCl (17.9 g.) is treated at 60.degree. with 14.9 g. cyclohexylglyoxal-0.5H2O to give 7.5 g. 7-cyclohexyllumazine [III (X = H, Y = cyclohexyl)], m. 229-31.degree., which is hydrolyzed to give II (X = OH, Y = cyclohexyl, Z = H). Similarly prepd. are (m.p. given): III (X = Me, Y = Ph) [or III (X = Me, Y = Me)], 281.5-2.5.degree.; III (X = Ph, Y = Me) [or III (X = Me, Y = Ph) [sic], 254.5-5.5.degree.; II (X = OH, Y = Ph, Z = Me) [or II (X = OH, Y = Me, Z = Ph)], 193.5-4.5.degree.; II (X = OH, Y = Me, Z = Ph) [or II (X = OH, Y = Ph, Z = Me)] [sic], 155-6.degree.. II (X = MeO, Y = Ph, Z = Me) [or II (X = MeO, Y = Me, Z = Ph)] (m. 163-4.degree.) and II (X = MeO, Y = Me, Z = Ph) [or II (X = MeO, Y = Ph, Z = Me)] [sic] (m. 162.5-3.5.degree.) are prepd. by esterification. Methyl 3-isopropylidenamino-6-anilino-2-pyrazinecarboxylate, m. 195.5-7.5.degree., is prepd. from Me2CO and the amine. Me 3-amino-5,6,7,8-tetrahydroquinoxaline-2-carboxylate, m. 154-5.degree., and Me 3-amino-7-chloroquinoxaline-2-carboxylate, m. 224.5-5.5.degree., are prepd. by esterification. Alloxan-H2O (61.44 g.) is treated with 60 g. 3,4-(H2N)2C6H3Cl to give 33% 8-chloroalloxazine, m. 365-6.degree., and 42% 7-Chloroalloxazine, m. >380.degree., which is treated at 165.degree. with NH3 in an autoclave to give 68% 3-amino-7-chloroquinoxaline-2-carboxylic acid, m. 191-2.degree. (decompn.). A mixt. of 33 g. II (X = NH2, Y = H, Z = Cl), 200 ml. Ac2O, and 200 ml. HC(OEt)3 is refluxed 1.5 hrs. to give 20 g. 4-hydroxy-6-chloropteridine (VI), m. 268-70.degree. (decompn.). VI (5.5 g.) is treated with 4.4 g. PhCH2SH to give 5.5 g. 4-hydroxy-6-benzylthiopteridine (VIII), m. 233-5.degree.. Similarly prepd. is 4-hydroxy-6-methylthiopteridine, m. 289.5-91.5.degree.. VII is heated with NaOH to give II (X = OH, Y = H, Z = PhCH2S(VIII), m. 138.9.degree.. Similarly prepd. is II (X = OH, Y = H, Z = MeS), m. 182-4.degree. (decompn.). II (X = MeO, Y = Me2N, Z = Cl) (11.5 g.) is treated with 26.3 g. H2NC(:NH)NH2.HCl (IX) in the presence of 5.75 g. Na to give 93% (3-amino-5-dimethylamino-6-chloro-2-pyrazinecarbonyl)guanidine (X), m. 216-17.degree., HCl salt m. 298.degree. (decompn.). Similarly prepd. is I.HCl (R = R1 = H, X = Y = Cl) (m. 259-61.degree.) which is treated with Me2NH to give X. II (X = MeO, Y = Me2NCH2CHO, Z = Cl) (9.4 g.) is treated with 20.0 g. IX in the presence of 4 g. Na to give 2.5 g. I.2HCl [R = R1 = H, X = NHC(:NH)NH2, Z = Cl], m. >340.degree.. A soln. of 8.5 g. VIII in 50 ml. Ac2O is heated 5 hrs. to give 6.6 g. 2-methyl-6-benzylthio-4H-pyrazine[2,3-d][1,3]oxazin-4-one [IV (X = PhCH2S)] (XI), m. 116.5-18.5.degree.; similarly prepd. is IV (X = MeS), m. 189-91.degree.. XI (3.4 g.) is treated with 5.0 g. IX in the presence of 1.0 g. Na to give 1.1 g. I (R = R1 = X = H, Y = PhCH2S), m. 171-3.degree. (decompn.). Also prepd., by the above or related methods, are the following I (R = R1 = H) (X, Y, and m.p. given): NH2, Br, 232.5-5.5.degree. (decompn.); NH2, iodine, 273-4.degree. (decompn.); H, MeS, 203-5.degree.; H, MeSO2, 224-6.degree. (decompn.); OH, H, >310.degree.; NH2, H, 286-8.degree.; Me2N, H, 224-5.degree.; MeO, H, 229-30.degree.; PhCH2NH, H, 231-3.degree.; the following I (R = R1 = H, Y = Cl) (X and m.p. given): NH2, 240.5-1.5.degree. (HCl salt m. 293.5.degree.); MeNH, 238-9.degree.; EtNH, 217-18.degree.; PrNH, 221-2.degree.; iso-PrNH, 215.degree.; CH2:CHCH2NH, 213-14.degree.; BuNH, 219.5.degree.; sec-BuNH, 208-9.degree.; iso-BuNH, 221.degree.; tert-BuNH, 222-3.degree.; Me(CH2)4NH, 215-16.degree.; BuCHMeNH, 186.5-8.5.degree.; Et2CHNH, 209-11.degree.; Me(CH2)5NH, 194.5-6.5.degree.; cyclopropylmethylamino, 220-1.5.degree.; cyclopropylamino, 213-15.degree.; cyclopentylamino, 219-20.degree.; PhCH2NH, 206-9.degree.; p-MeC6H4CH2NH, 216-17.degree.; o-FC6H4CH2NH,

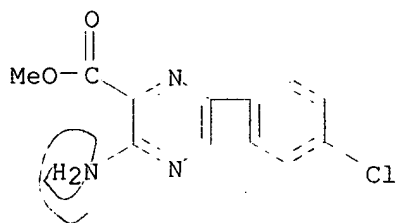
206-8.degree.; p-ClC6H4CH2NH, 225-6.degree.; PhCH2CH2NH, - (HCl salt m. 199-202.degree.); F3CCH2NH, 232-3.degree.; F3CCH2CH2NH, 221-2.5.degree.; HOCH2CH2NH, - (HCl salt m. 272-3.degree.); HOCH2(CHOH)4CH2NH, 223-4.degree.; H2NCH2CH2NH, - (HCl salt m. 311.degree.); Me2NCH2CH2NH, 192.5-4.5.degree.; 4-pyridylmethylamino, 239-40.degree.; 2-furylmethylamino, 217-18.degree.; PhNH, 246.5-8.5.degree.; p-ClC6H4NH, 276-8.degree.; MeEtN, 229-3.degree.; MeBuN, 214-15.degree.; iso-PrMeN, 207-8.degree.; Me(CH2:CHCH2)N, 207-8.degree.; MeBuN, 208-9.degree.; Et2N, 215.degree.; EtPrN, 224-5.degree.; iso-PrEtN, 207-8.degree.; Et(CH2:CHCH2)N, 208-9.degree.; EtBuN, 200.5-1.5.degree.; Pr2N, 221-2.degree.; PrBuN, 215-17.degree.; 1-pyrrolidinyl, 244.5-5.5.degree.; hexamethylenimino, 224-5.degree.; 4-methylpiperazino, - (2HCl salt m. 229-300.degree.); MeNHNH, 234.degree.; Cl2N, - (HCl salt m. 259-61.degree.); MeNH, 218-19.degree. (decompn.); Me2NNMe, - [2HCl salt m. 262.degree. (decompn.)]; MeNH, 210.degree. (decompn.) [sic]; Me2N, 245.degree. (decompn.); MeBrN, - [HCl salt m. 288.degree. (decompn.)]; EtNH, 207.5-9.5.degree. (decompn.); cyclohexylamino, 221-2.degree. (decompn.); cycloheptylamino, 228-30.degree. (decompn.); cyclopropylamino, 196.5-9.degree. (decompn.); PhNH, 224-6.degree. (decompn.); PhNH, 194.5-5.5.degree. (decompn.) [sic]; Ph2N, 234.5-5.5.degree.; PhClN, 214-16.degree. (decompn.); PhBrN, 234-6.degree. (decompn.); p-ClC6H4NH, 282-5.degree. (decompn.); MePhN, 212-13.degree. (decompn.); MePhN, 218-19.degree. (decompn.) [sic]; Me2NNPh, 204-6.degree. (decompn.); 1-pyrrolidinyl, 220-1.degree.; 1-pyrryl, 211-13.degree.; 3-chloro-1-pyrrolyl, 246-7.degree. (decompn.); (3-isopropylideneamino-6-anilino-2-pyrazinecarbonyl)guanidine, 214-16.degree. (decompn.); (3-acetoamido-6-methylthio-2-pyrazinecarbonyl)guanidine, 220-2.degree.; the following I (X = NH2, Y = Cl) (R, R1, m.p., and m.p. HCl salt given): H, HOCH2CH2, -, 228.5-9.5.degree. (decompn.); H, Ph, -, -, [MeSO3H salt m. 272.degree. (decompn.)]; H, PhCH2, 215-16.degree. (decompn.); -, H, p-FC6H4CH2, 216-19.5.degree. (decompn.), -, H, PhCHMe, 153-60.degree. (decompn.), -, H, 2-ClOH7CH2, 243.5-5.5.degree. (decompn.), -, H, 3-pyridylmethyl, 280.5-3.5.degree. (decompn.), -, H, p-MeC6H4CH2, 210-12.degree. (decompn.), -, Me, PhCH2, 274.5.degree. (decompn.), -, H, o-ClC6H4CH2, 220-3.degree. (decompn.), -, H, p-ClC6H4CH2, 204-6.degree. (decompn.), -, H, p-MeOC6H4CH2, 175.5-9.5.degree. (decompn.), -, H, 2,4-Me2C6H3CH2, 220-2.degree. (decompn.), -, H, 2,4-Cl2C6H3CH2, -, 267.5-70.5.degree. (decompn.); H, 3,4-Cl2C6H3CH2, 216-19.degree. (decompn.), -, H, PhClH,CH2, 219-21.degree. (decompn.), -, Me, Me, 240.degree. (decompn.), -, [HCl.H2O salt m. 275.degree. (decompn.)]; H, octahydrol-azocinyl, -, -, Et, Et, 265.degree. (decompn.), -, Bu, Bu, 148-9.degree., -, (RR1 = ) (CH2)4, -, -, (RR1 = ) 3-oxapentamethylene, -, -, the following I (R = R1 = Me, Y = Cl) (X and m.p. given): iso-PrNH, 238-40.5.degree.; CH2:CHCH2NH, 213-15.degree.; BuNH, 187.5.degree.; cyclopropylmethylamino, 196-7.degree.; Me2N, 219.degree.; MeEtN, 217-18.degree.; iso-PrMeN, 209-11.degree.; Et2N, 212-14.degree.; I (R = H, R1 = HOCH2CH2, X = iso-PrNH, Y = Cl).HCl.0.5H2O [m. 185-6.degree. (decompn.)], and 1-(3,5-diamino-6-chloro-2-pyrazinecarbonyl)2,3-dimethylguanidine.

IT 1148-80-7P 1503-39-5P 1634-17-9P  
1634-19-1P 1680-39-3P 5284-16-2P  
5354-75-6P 7202-20-2P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

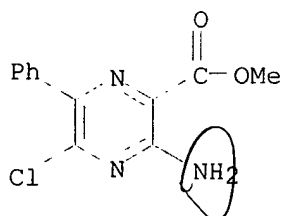
RN 1148-80-7 CAPLUS

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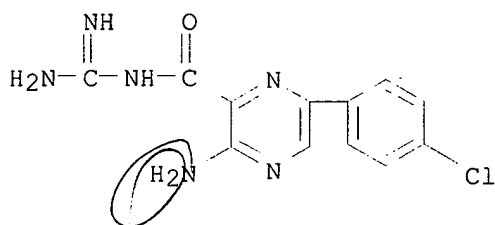
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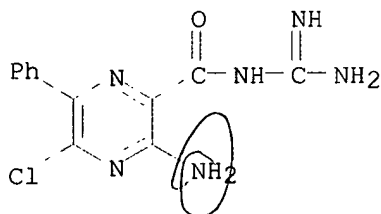
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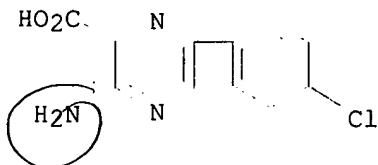
RN 1634-19-1 CAPLUS

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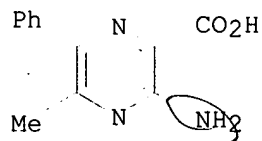


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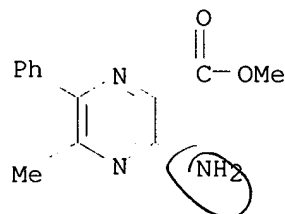
CN Pyrazinecarboxylic acid, 3-amino-6-(p-chlorophenyl)- (7CI, 8CI) (CA INDEX NAME)



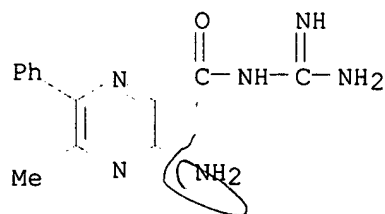
RN 5284-16-2 CAPLUS  
 CN Pyrazinecarboxylic acid, 3-amino-5-methyl-6-phenyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 5354-75-6 CAPLUS  
 CN Pyrazinecarboxylic acid, 3-amino-5-methyl-6-phenyl-, methyl ester (7CI, 8CI) (CA INDEX NAME)



RN 7202-20-2 CAPLUS  
 CN Pyrazinecarboxamide, N-amidino-3-amino-5-methyl-6-phenyl- (7CI, 8CI) (CA INDEX NAME)



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 INVENTOR(S): Cragoe, Edward J., Jr.; Tull, Roger J.; Broeke, Jan T.  
 PATENT ASSIGNEE(S): Merck and Co., Inc.  
 SOURCE: Brit., 6 pp.  
 CODEN: BRXXAA  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

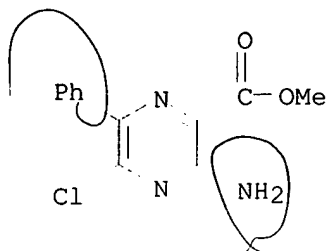
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 1082060		19670906	GB	19641006

GI For diagram(s), see printed CA Issue.

AB To a suspension of 765 g. I in 5 l. dry C<sub>6</sub>H<sub>6</sub> was added excess (1.99 l., 3318 g.) SO<sub>2</sub>Cl<sub>2</sub> over 30 min., the temp. rising to .apprx.50.degree.. Refluxing 5 hrs., stirring overnight at room temp., distg. SO<sub>2</sub>Cl<sub>2</sub> to a vapor temp. of 78.degree., and cooling the residue to 6.degree. gave 888 g. red II (X = Y = Cl) (III), m. 228-30.degree.. Purification of III by dissolving the material in 56 l. hot MeCN, filtering through a heated column contg. 444 g. C, washing with 25 l. hot MeCN, concg. to 6 l., and filtering hot gave on cooling 724 g. yellow III, m. 233-4.degree.. Passage of 140 g. Cl gas into a soln. of 90 g. I in 3180 ml. H<sub>2</sub>O and 750 ml. AcOH at 40.degree. for 25 min. gave a nearly white ppt. of IV (X = Cl) (V), m. 142.degree.. The moist V was stirred with 150 g. NaHSO<sub>3</sub> in 900 ml. H<sub>2</sub>O 0.5 hr., the temp. being kept at 25.degree. by addn. of ice, to give 60 g. IV (X = H) (VI), m. 159-61.degree.. Addn. of 10 ml. SO<sub>2</sub>Cl<sub>2</sub> dropwise to 9.35 g. VI resulted in a rise of temp. and evolution of gas. The mixt. was kept overnight at room-temp. and heated at 70.degree. for 1 hr. to give 4.2 g. III, m. 225-7.degree.. III, m. 233-4.degree., was prepd. in 12% yield by treatment of 34.8 g. VII (X = Br) with 89 ml. SO<sub>2</sub>Cl<sub>2</sub> on the steambath for 1 min., cooling in ice, and leaving at room temp. overnight. To a stirred suspension of 30.6 g. I and 39.8 g. Hg(OAc)<sub>2</sub> in 500 ml. H<sub>2</sub>O heated on the steam-bath was rapidly added a soln. of 50.8 g. iodine in 250 ml. warm dioxane. After 40 min. heating, pouring the cooled mixt. into 600 ml. 15% aq. KI gave 13.5 g. VII (X = I) (VIII), m. 200-2.degree. (AcOH). Treatment of VIII with SO<sub>2</sub>Cl<sub>2</sub> gave III. VII (X = Ph) (IX), m. 140-1.degree. (MeOH), was prepd. by treatment of 30 g. of the corresponding carboxylic acid in 1.5 l. MeOH with 480 g. HCl. Reaction of 28.6 g. IX with 90 ml. SO<sub>2</sub>Cl<sub>2</sub> at room-temp. 1.5 hrs. gave 15 g. II (X = Cl, Y = Ph), m. 187.5-91.5.degree. (AcOH). Heating a mixt. of 31 g. 3-amino-6-methylpyrazinecarboxamide with 320 ml. aq. 10% NaOH and cooling gave 25 g. of Na salt of X (X = Me), 97 g. of which on stirring with 77 g. Me<sub>2</sub>SO<sub>4</sub> in 700 ml. MeOH 19 hrs. gave 18 g. VII (X = Me) (XI), m. 138.5-40.5.degree. (C<sub>6</sub>H<sub>6</sub>). Chlorination of 9.2 g. XI with 65 ml. SO<sub>2</sub>Cl<sub>2</sub> at room temp. gave 4.4 g. II (X = Cl, Y = Me), m. 176-8.5.degree. (AcOEt). 52.5 Grams aminocarbamoylacetamide-2HCl was added to an ice-cold soln. of 46.9 g. cyclohexylglyoxal in 450 ml. H<sub>2</sub>O followed by 65 ml. concd. NH<sub>4</sub>OH to make the soln. basic. After 20 hrs. filtration and crystn. from iso-PrOH gave 67% XII (R = NH<sub>2</sub>). Hydrolysis of this amide with hot 10% NaOH and acidification gave 61% XII (R = OH), m. 118-21.degree., which on esterification with MeOH-HCl at room temp. 24 hrs. gave 49% XII (R = OMe) (XIII), m. 126.5-28.degree. (iso-PrOH). Chlorination of XIII with SO<sub>2</sub>Cl<sub>2</sub> gave II (X = Cl, Y = cyclohexyl) (no details given). Ester XIV (R = OMe, X = H), m. 231-2.degree. (iso-PrOH), was prepd. by esterification of the acid XIV (R = OH, X = H) with MeOH-HCl. Chlorination of the ester gave XIV (R = OMe, X = Cl) (no details given). Stirring a mixt. of 30 g. XV (R = H) and 650 ml. 30% HCl in MeOH 42 hrs. at room-temp. gave 15.4 g. XV (R = Me), m. 165-7.degree. (H<sub>2</sub>O). Chlorination of the latter gave II (X = Me, Y = Cl). To a soln. of guanidine in 50 ml. iso-PrOH prepd. from the hydrochloride (3.85 g.) and 920 mg. Na was added 4.44 g. III and the mixt. refluxed for 15 min. Cooling and conversion into the hydrochloride gave 3.5 g. XVI, m. 259-61.degree.; free base m. 216-17.degree.. Alk. hydrolysis of III gave 3-amino-5,6-dichloro-2-pyrazinecarboxylic acid, m. 227.degree. (decompn.). The compds. are useful as intermediates in the prepn. of diuretic and naturetic agents such as XVI useful in treatment of edema and hypertension.

IT 1503-39-5P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)

RN 1503-39-5 CAPLUS  
 CN Pyrazinecarboxylic acid, 3-amino-5-chloro-6-phenyl-, methyl ester (7CI, 8CI) (CA INDEX NAME)



124 ANSWER 136 OF 145 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1967:500105 CAPLUS

DOCUMENT NUMBER: 67:100105

TITLE: Pyrazine diuretics. III. 5- and 6-alkyl, -cyclo-alkyl, and -aryl derivatives of N-amidino-3-aminopyrazinecarboxamides

AUTHOR(S): Bicking, John B.; Robb, Charles M.; Kwong, Sara F.; Cragoe, Edward J., Jr.

CORPORATE SOURCE: Merck and Co. Inc., West Point, Pa., USA

SOURCE: J. Med. Chem. (1967), 10(4), 598-602

CODEN: JMCMAR.

DOCUMENT TYPE: Journal

LANGUAGE: English

GI For diagram(s), see printed CA Issue.

AB cf. CA 63: 11561e; 66: 37887h. In evaluations of N-amidino-3-aminopyrazinecarboxamides as diuretics, a series of 5- and 6-alkyl, -cycloalkyl, and -aryl derivs. was synthesized and studied for effects on renal electrolyte excretion. Several compds. reverse the electrolyte excretion effects of deoxycorticosterone acetate in the adrenalectomized rat, the most highly active being N-amidino-3-amino-6-methylpyrazinecarboxamide (I). 16 references.

IT 1148-80-7P 1503-39-5P 1634-19-1P

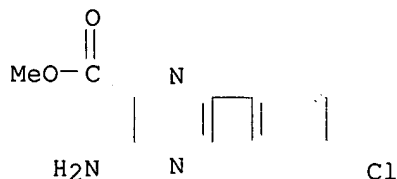
1680-39-3P 5354-75-6P 7202-20-2P

16014-43-0P 16014-59-8P

RL: SPN (Synthetic preparation); PREP (Preparation) (prepn. of)

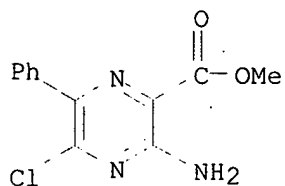
RN 1148-80-7 CAPLUS

CN Pyrazinecarboxylic acid, 3-amino-6-(p-chlorophenyl)-, methyl ester (7CI, 8CI) (CA INDEX NAME)

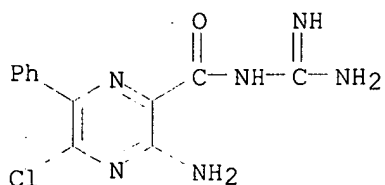


RN 1503-39-5 CAPLUS

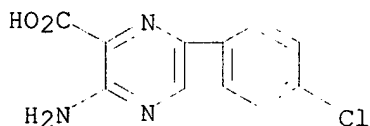
CN Pyrazinecarboxylic acid, 3-amino-5-chloro-6-phenyl-, methyl ester (7CI, 8CI) (CA INDEX NAME)



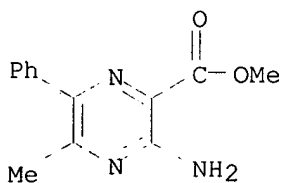
RN 1634-19-1 CAPLUS  
 CN Pyrazinecarboxamide, N-amidino-3-amino-5-chloro-6-phenyl- (7CI, 8CI) (CA INDEX NAME)



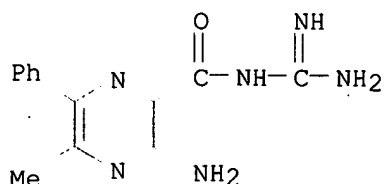
RN 1680-39-3 CAPLUS  
 CN Pyrazinecarboxylic acid, 3-amino-6-(p-chlorophenyl)- (7CI, 8CI) (CA INDEX NAME)



RN 5354-75-6 CAPLUS  
 CN Pyrazinecarboxylic acid, 3-amino-5-methyl-6-phenyl-, methyl ester (7CI, 8CI) (CA INDEX NAME)

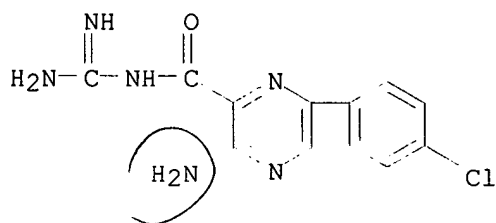


RN 7202-20-2 CAPLUS  
 CN Pyrazinecarboxamide, N-amidino-3-amino-5-methyl-6-phenyl- (7CI, 8CI) (CA INDEX NAME)



RN 16014-43-0 CAPLUS

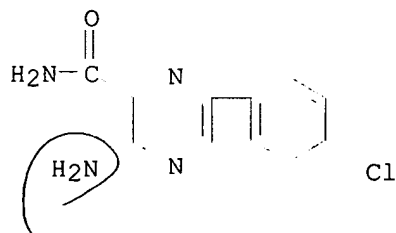
CN Pyrazinecarboxamide, N-amidino-3-amino-6-(p-chlorophenyl)-, monohydrochloride (8CI) (CA INDEX NAME)



● HCl

RN 16014-59-8 CAPLUS

CN Pyrazinecarboxamide, 3-amino-6-(p-chlorophenyl)- (8CI) (CA INDEX NAME)



L24 ANSWER 137 OF 145

ACCESSION NUMBER:

TITLE:

INVENTOR(S):

USPATFULL

2001:102817 USPATFULL

Pyrazine compounds

Cox, Brian, Bedford, United Kingdom

Edney, Dean David, London, United Kingdom

Loft, Michael Simon, London, United Kingdom

Nobbs, Malcolm Stuart, Stevenage, United Kingdom

Shah, Gita Punjabhai, London, United Kingdom

Glaxo Wellcome, Inc., Research Triangle Park, NC, United States (U.S. corporation)

PATENT ASSIGNEE(S):

PATENT INFORMATION:

NUMBER

KIND

DATE

US 6255307

B1

20010703

WO 9838174

19980903

APPLICATION INFO.:

US 1999-380062

19990825 (9)

WO 1998-EP1077

19980226

19990825 PCT 371 date

19990825 PCT 102(e) date

Searched by Barb O'Bryen, STIC 308-4291



	NUMBER	DATE
PRIORITY INFORMATION:	GB 1997-4275	19970301
	GB 1997-8183	19970423
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	GRANTED	
PRIMARY EXAMINER:	Bernhardt, Emily	
LEGAL REPRESENTATIVE:	Nixon & Vanderhye	
NUMBER OF CLAIMS:	14	
EXEMPLARY CLAIM:	1	
LINE COUNT:	1086	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A compound of formula (I) wherein R.sup.1 is selected from the group consisting of phenyl substituted by one or more halogen atoms, naphthyl and naphthyl substituted by one or more halogen atoms; R.sup.2 is selected from the group consisting of --NH.sub.2 and --NHC(.dbd.O)R.sup.a ; R.sup.3 is selected from the group consisting of --NR.sup.b R.sup.c, --NHC(.dbd.O)R.sup.a and hydrogen, R.sup.4 is selected from the group consisting of hydrogen, -C.sub.1-4 alkyl, -C.sub.1-4 alkyl substituted by one or more halogen atoms, --CN, --CH.sub.2 OH, --CH.sub.2 OR.sup.d and --CH.sub.2 S(O).sub.x R.sup.d ; wherein R.sup.a represents C.sub.1-4 alkyl or C.sub.3-7 cycloalkyl, and R.sup.b and R.sup.c, which may be the same or different, are selected from hydrogen and C.sub.1-4 alkyl, or together with the nitrogen atom to which they are attached, form a 6-membered nitrogen containing heterocycle, which heterocycle can be further substituted with one or more C.sub.1-4 alkyl; R.sup.d is selected from C.sub.1-4 alkyl or C.sub.1-4 alkyl substituted by one or more halogen atoms; x is an integer zero, one or two; and pharmaceutically acceptable derivatives thereof; with the proviso that R.sup.1 does not represent (a); when R.sup.2 is --NH.sub.2, and both R.sup.3 and R.sup.4 are hydrogen.

##STR1##

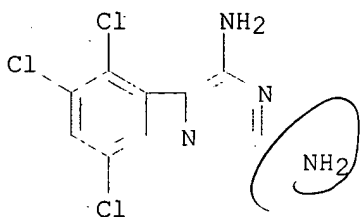
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 212778-82-0P 212778-83-1P 212779-15-2P

(prepn. of pyrazines as anticonvulsants)

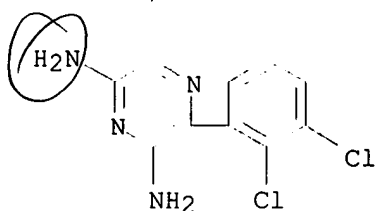
RN 212778-82-0 USPATFULL

CN 2,6-Pyrazinediamine, 3-(2,3,5-trichlorophenyl)- (9CI) (CA INDEX NAME)

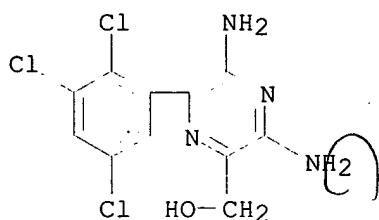


RN 212778-83-1 USPATFULL

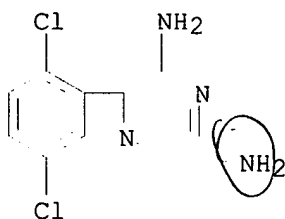
CN 2,6-Pyrazinediamine, 3-(2,3-dichlorophenyl)- (9CI) (CA INDEX NAME)



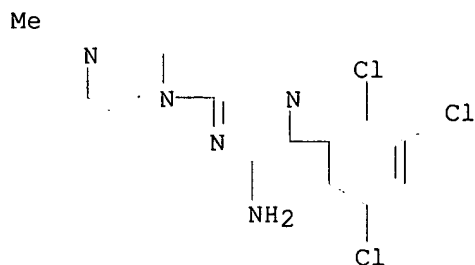
RN 212779-15-2 USPATFULL  
 CN Pyrazinemethanol, 3,5-diamino-6-(2,3,5-trichlorophenyl)- (9CI) (CA INDEX NAME)



IT 212778-84-2P 212778-94-4P 212778-96-6P  
 212779-00-5P 212779-01-6P 212779-03-8P  
 212779-05-0P 212779-07-2P 212779-09-4P  
 212779-13-0P 212779-17-4P  
 (prepn. of pyrazines as anticonvulsants)  
 RN 212778-84-2 USPATFULL  
 CN 2,6-Pyrazinediamine, 3-(2,5-dichlorophenyl)- (9CI) (CA INDEX NAME)

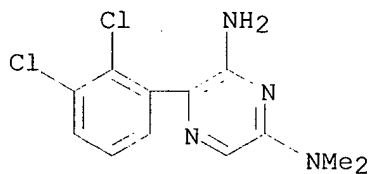


RN 212778-94-4 USPATFULL  
 CN Pyrazinamine, 6-(4-methyl-1-piperazinyl)-3-(2,3,5-trichlorophenyl)- (9CI)  
 (CA INDEX NAME)



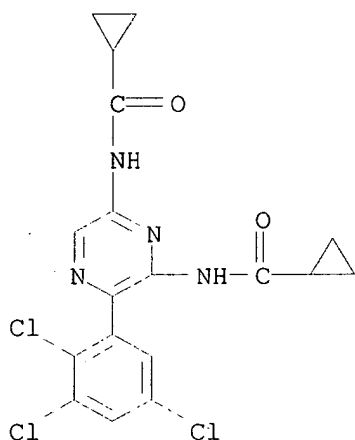
RN 212778-96-6 USPATFULL

CN 2,6-Pyrazinediamine, 3-(2,3-dichlorophenyl)-N6,N6-dimethyl- (9CI) (CA INDEX NAME)



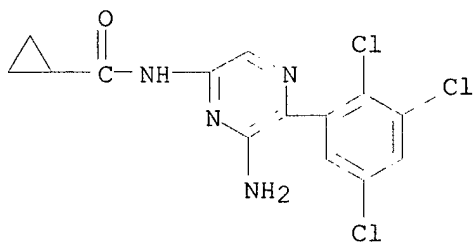
RN 212779-00-5 USPATFULL

CN Cyclopropanecarboxamide, N,N'-[3-(2,3,5-trichlorophenyl)-2,6-pyrazinediyl]bis- (9CI) (CA INDEX NAME)



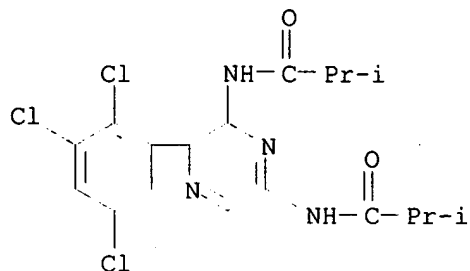
RN 212779-01-6 USPATFULL

CN Cyclopropanecarboxamide, N-[6-amino-5-(2,3,5-trichlorophenyl)pyrazinyl]- (9CI) (CA INDEX NAME)

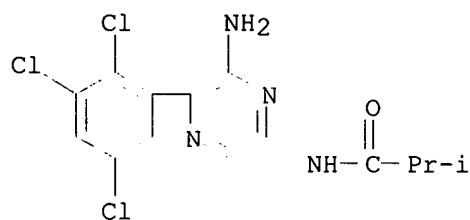


RN 212779-03-8 USPATFULL

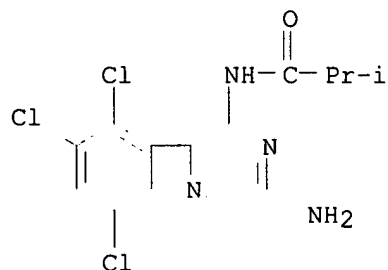
CN Propanamide, N,N'-[3-(2,3,5-trichlorophenyl)-2,6-pyrazinediyl]bis[2-methyl- (9CI) (CA INDEX NAME)]



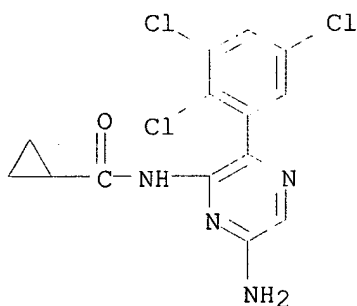
RN 212779-05-0 USPATFULL  
 CN Propanamide, N-[6-amino-5-(2,3,5-trichlorophenyl)pyrazinyl]-2-methyl-  
 (9CI) (CA INDEX NAME)



RN 212779-07-2 USPATFULL  
 CN Propanamide, N-[6-amino-3-(2,3,5-trichlorophenyl)pyrazinyl]-2-methyl-  
 (9CI) (CA INDEX NAME)

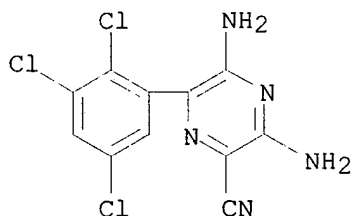


RN 212779-09-4 USPATFULL  
 CN Cyclopropanecarboxamide, N-[6-amino-3-(2,3,5-trichlorophenyl)pyrazinyl]-  
 (9CI) (CA INDEX NAME)



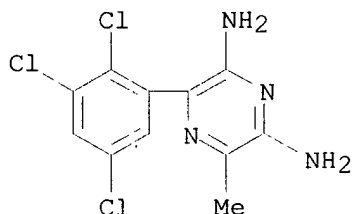
RN 212779-13-0 USPATFULL

CN Pyrazinecarbonitrile, 3,5-diamino-6-(2,3,5-trichlorophenyl)- (9CI) (CA INDEX NAME)



RN 212779-17-4 USPATFULL

CN 2,6-Pyrazinediamine, 3-methyl-5-(2,3,5-trichlorophenyl)- (9CI) (CA INDEX NAME)

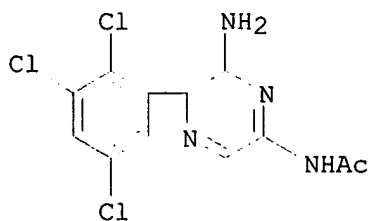


IT 212779-29-8P 212779-35-6P 212779-38-9P  
212779-39-0P 212779-41-4P 212779-42-5P  
212779-43-6P

(prepn. of pyrazines as anticonvulsants)

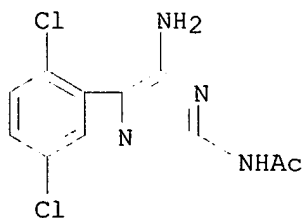
RN 212779-29-8 USPATFULL

CN Acetamide, N-[6-amino-5-(2,3,5-trichlorophenyl)pyrazinyl]- (9CI) (CA INDEX NAME)



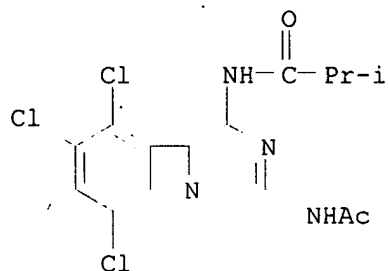
RN 212779-35-6 USPATFULL

CN Acetamide, N-[6-amino-5-(2,5-dichlorophenyl)pyrazinyl]- (9CI) (CA INDEX NAME)



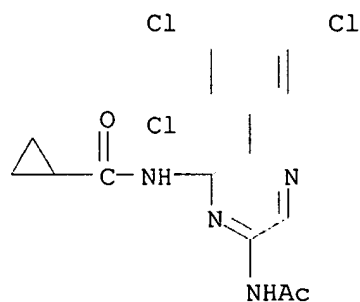
RN 212779-38-9 USPATFULL

CN Propanamide, N-[6-(acetylamino)-3-(2,3,5-trichlorophenyl)pyrazinyl]-2-methyl- (9CI) (CA INDEX NAME)



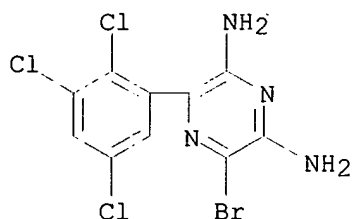
RN 212779-39-0 USPATFULL

CN Cyclopropanecarboxamide, N-[6-(acetylamino)-3-(2,3,5-trichlorophenyl)pyrazinyl]- (9CI) (CA INDEX NAME)



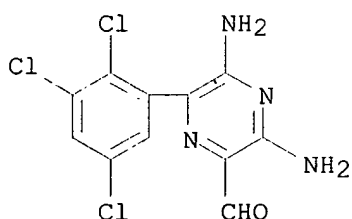
RN 212779-41-4 USPATFULL

CN 2,6-Pyrazinediamine, 3-bromo-5-(2,3,5-trichlorophenyl)- (9CI) (CA INDEX NAME)



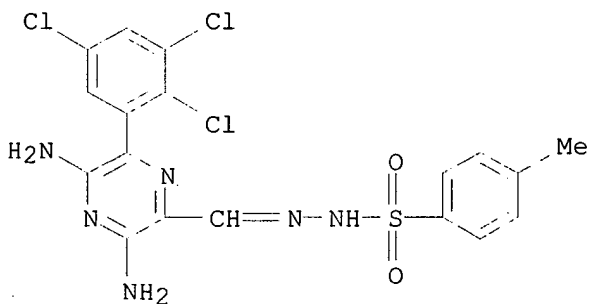
RN 212779-42-5 USPATFULL

CN Pyrazinecarboxaldehyde, 3,5-diamino-6-(2,3,5-trichlorophenyl)- (9CI) (CA INDEX NAME)



RN 212779-43-6 USPATFULL

CN Benzenesulfonic acid, 4-methyl-, [[3,5-diamino-6-(2,3,5-trichlorophenyl)pyrazinyl]methylene]hydrazide (9CI) (CA INDEX NAME)



L24 ANSWER 138 OF 145

USPATFULL

ACCESSION NUMBER:

2001:25925 USPATFULL

TITLE:

Spiro-indolines as Y5 receptor antagonists

INVENTOR(S):

Gao, Ying-Duo, Edison, NJ, United States  
 MacNeil, Douglas J., Westfield, NJ, United States  
 Yang, Lihu, Edison, NJ, United States  
 Morin, Nancy R., Cranford, NJ, United States  
 Fukami, Takehiro, Ibaraki, Japan  
 Kanatani, Akio, Ibaraki, Japan  
 Fukuroda, Takahiro, Ibaraki, Japan  
 Ishii, Yasuyuki, Saitama, Japan  
 Ihara, Masaki, Ibaraki, Japan

PATENT ASSIGNEE(S): Merck & Co., Inc., Rahway, NJ, United States (U.S. corporation)  
Banyu Pharmaceutical Co., Ltd., Tokyo, Japan (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6191160	B1	20010220
APPLICATION INFO.:	US 1999-436120		19991108 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1998-107835	19981110 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	Granted	
PRIMARY EXAMINER:	Shah, Mukund J.	
ASSISTANT EXAMINER:	Schroeder, Ben	
LEGAL REPRESENTATIVE:	Wallinger, Nicole M., Winokur, Melvin	
NUMBER OF CLAIMS:	15	
EXEMPLARY CLAIM:	1	
LINE COUNT:	1911	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Compounds of the general structural formula I ##STR1##

are selective NPY Y5 receptor antagonists. The compounds and compositions of the present invention are useful in the treatment of obesity and complications associated therewith.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 268536-92-1P 268536-93-2P 268536-94-3P

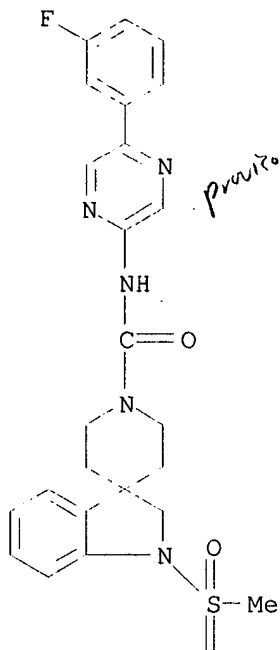
(prepn. of spiroindolines as Y5 receptor antagonists)

RN 268536-92-1 USPATFULL

CN Spiro[3H-indole-3,4'-piperidine]-1'-carboxamide, N-[5-(3-fluorophenyl)pyrazinyl]-1,2-dihydro-1-(methylsulfonyl)- (9CI) (CA INDEX NAME)



PAGE 1-A

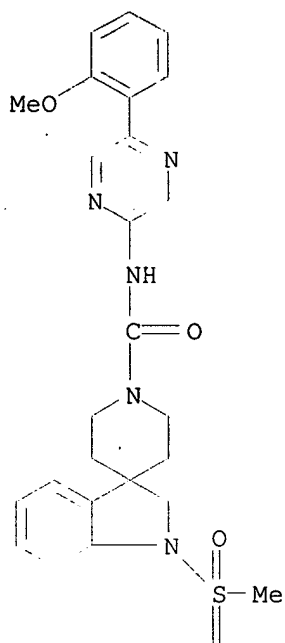


PAGE 2-A



RN 268536-93-2 USPATFULL  
CN Spiro[3H-indole-3,4'-piperidine]-1'-carboxamide, 1,2-dihydro-N-[5-(2-methoxyphenyl)pyrazinyl]-1-(methylsulfonyl)- (9CI) (CA INDEX NAME)

PAGE 1-A

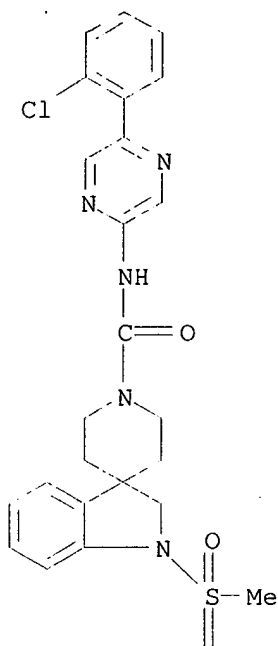


PAGE 2-A



RN 268536-94-3 USPATFULL  
CN Spiro[3H-indole-3,4'-piperidine]-1'-carboxamide, N-[5-(2-chlorophenyl)pyrazinyl]-1,2-dihydro-1-(methylsulfonyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

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O

~~L24~~ ANSWER 139 OF 145. USPATFULL  
 ACCESSION NUMBER: 97:52000 USPATFULL  
 TITLE: Insecticidal pteridines and 8-deazapteridines  
 INVENTOR(S): Henrie, II, Robert N., East Windsor, NJ, United States  
 Peake, Clinton J., Trenton, NJ, United States  
 Cullen, Thomas G., Milltown, NJ, United States  
 Lew, Albert C., Princeton Junction, NJ, United States  
 Silverman, Ian R., Maple Shade, NJ, United States  
 PATENT ASSIGNEE(S): FMC Corporation, Philadelphia, PA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5639753		19970617
APPLICATION INFO.:	US 1995-612657		19951128 (8)
RELATED APPLN. INFO.:	Continuation of Ser. No. US 1993-67897, filed on 27 May 1993, now patented, Pat. No. US 5521190		
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Raymond, Richard L.		
LEGAL REPRESENTATIVE:	Back, Stanford M., Kennedy, Robert M.		
NUMBER OF CLAIMS:	19		
EXEMPLARY CLAIM:	1		
LINE COUNT:	1593		

Searched by Barb O'Bryen, STIC 308-4291

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB This invention relates to pteridine and 8-deazapteridine compounds and compositions containing the same which are useful for controlling insects in agricultural crops. These pteridines may be represented by the following structure: ##STR1## wherein R and R.sup.1 are independently selected from amino, lower alkylamino, di(lower alkyl)amino (e.g., --N(CH.sub.3).sub.2), or di(lower alkyl)aminomethyleneamino (e.g., --N.dbd.CHN(CH.sub.3).sub.2);

R.sup.2 is hydrogen, amino, lower alkyl (e.g., --CH.sub.3, --CH(CH.sub.3).sub.2), di(lower alkyl)aminomethyleneamino, hydroxy, lower alkoxy, phenyl or substituted phenyl, haloalkylphenylalkyl (e.g., 3-trifluoromethylphenylmethyl);

Q is N or CH;

R.sup.3 is -(n).sub.m -R.sup.4, where m is 0 or 1; wherein, when m is 1,

n is a bridging atom or moiety selected from oxygen, sulfur, sulfinyl, sulfonyl, lower alkylene (e.g., --CH.sub.2 --, or --CH.sub.2 CH.sub.2 --), lower alkenylene (e.g., --CH.dbd.CH--), lower alkynylene (e.g., --C.tbd.C--), lower haloalkenylene (e.g., --C(Cl).dbd.CH--), carbonyl, aminomethyl (e.g., --CH.sub.2 NH--), or (substituted amino)methyl (e.g., --CH.sub.2 N(CH.sub.3)--); and

R.sup.4 is hydrogen, lower alkyl (e.g., --CH.sub.3, or --CH(CH.sub.3).sub.2), thien-2-yl, pyridin-3-yl, or ##STR2## wherein (i) V, W, X, Y, and Z are as defined herein.

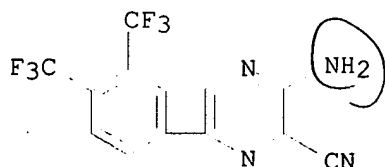
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 160602-30-2P 160602-32-4P 160602-33-5P

(prepn. and reactions for prepn. of insecticidal pteridines)

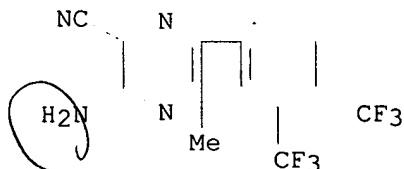
RN 160602-30-2 USPATFULL

CN Pyrazinecarbonitrile, 3-amino-6-[3,4-bis(trifluoromethyl)phenyl]- (9CI)  
(CA INDEX NAME)



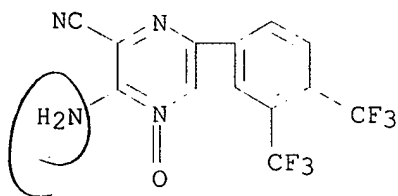
RN 160602-32-4 USPATFULL

CN Pyrazinecarbonitrile, 3-amino-6-[3,4-bis(trifluoromethyl)phenyl]-5-methyl- (9CI) (CA INDEX NAME)



RN 160602-33-5 USPATFULL

CN Pyrazinecarbonitrile, 3-amino-6-[3,4-bis(trifluoromethyl)phenyl]-, 4-oxide (9CI) (CA INDEX NAME)



~~134~~ ANSWER 140 OF 145    USPATFULL  
 ACCESSION NUMBER:    96:58340    USPATFULL  
 TITLE:    Insecticidal pteridines and 8-deazapteridines  
 INVENTOR(S):    Henrie, II, Robert N., East Windsor, NJ, United States  
                   Peake, Clinton J., Trenton, NJ, United States  
                   Cullen, Thomas G., Milltown, NJ, United States  
                   Lew, Albert C., Princeton Junction, NJ, United States  
                   Silverman, Ian R., Maple Shade, NJ, United States  
 PATENT ASSIGNEE(S):    FMC Corporation, Philadelphia, PA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5532367		19960702
APPLICATION INFO.:	US 1995-416017		19950331 (8)
RELATED APPLN. INFO.:	Division of Ser. No. US 1993-67897, filed on 27 May 1993		
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Raymond, Richard L.		
LEGAL REPRESENTATIVE:	Back, Stanford M., Kennedy, Robert M.		
NUMBER OF CLAIMS:	6		
EXEMPLARY CLAIM:	1		
LINE COUNT:	1505		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB    This invention relates to pteridine and 8-deazapteridine compounds which are useful for controlling insects in agricultural crops. These pteridines may be represented by the following structure: ##STR1## wherein R and R.sup.1 are amino;

R.sup.2 is hydrogen or lower alkyl;

Q is N or CH;

R.sup.3 is --(n).sub.m --R.sup.4, and

R.sup.4 is ##STR2## wherein n, m, V, W, X, Y, and Z are as defined in the specification.

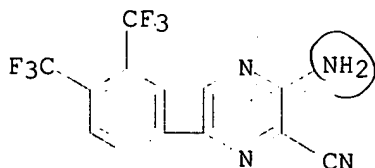
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 160602-30-2P 160602-32-4P 160602-33-5P

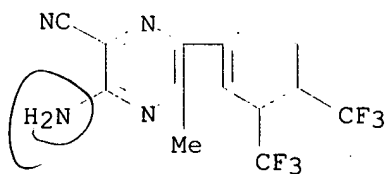
(prepn. and reactions for prepn. of insecticidal pteridines)

RN 160602-30-2    USPATFULL

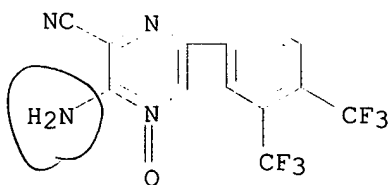
CN    Pyrazinecarbonitrile, 3-amino-6-[3,4-bis(trifluoromethyl)phenyl]- (9CI)  
       (CA INDEX NAME)



RN 160602-32-4 USPATFULL  
 CN Pyrazinecarbonitrile, 3-amino-6-[3,4-bis(trifluoromethyl)phenyl]-5-methyl-  
 (9CI) (CA INDEX NAME)



RN 160602-33-5 USPATFULL  
 CN Pyrazinecarbonitrile, 3-amino-6-[3,4-bis(trifluoromethyl)phenyl]-, 4-oxide  
 (9CI) (CA INDEX NAME)



~~124~~ ANSWER 141 OF 145 USPATFULL  
 ACCESSION NUMBER: 96:46048 USPATFULL  
 TITLE: Insecticidal pteridines and 8-deazapteridines  
 INVENTOR(S): Henrie, II, Robert N., East Windsor, NJ, United States  
 Peake, Clinton J., Trenton, NJ, United States  
 Cullen, Thomas G., Milltown, NJ, United States  
 Lew, Albert C., Princeton Junction, NJ, United States  
 Silverman, Ian R., Maple Shade, NJ, United States  
 PATENT ASSIGNEE(S): FMC Corporation, Philadelphia, PA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5521190		19960528
APPLICATION INFO.:	US 1993-67897		19930527 (8)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Raymond, Richard L.		
LEGAL REPRESENTATIVE:	Back, Stanford M., Kennedy, Robert M.		
NUMBER OF CLAIMS:	19		
EXEMPLARY CLAIM:	1		
LINE COUNT:	1633		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB This invention relates to pteridine and 8-deazapteridine compounds and

compositions containing the same which are useful for controlling insects in agricultural crops. These pteridines may be represented by the following structure: ##STR1## wherein R and R.sup.1 are independently selected from amino, lower alkylamino, di(lower alkyl)amino (e.g., --N(CH.sub.3).sub.2), or di(lower alkyl)aminomethyleneamino (e.g., --N.dbd.CHN(CH.sub.3).sub.2);

R.sup.2 is hydrogen, amino, lower alkyl (e.g., --CH.sub.3, --CH(CH.sub.3).sub.2), di(lower alkyl)aminomethyleneamino, hydroxy, lower alkoxy, phenyl or substituted phenyl, haloalkylphenylalkyl (e.g., 3-trifluoromethylphenylmethyl);

Q is N or CH;

R.sup.3 is --(n).sub.m --R.sup.4, where m is 0 or 1; wherein, when m is 1,

n is a bridging atom or moiety selected from oxygen, sulfur, sulfinyl, sulfonyl, lower alkylene (e.g., --CH.sub.2 --, or --CH.sub.2 CH.sub.2 --), lower alkenylene (e.g., --CH.dbd.CH--), lower alkynylene (e.g., --C.dbd.C--), lower haloalkenylene (e.g., --C(Cl).dbd.CH--), carbonyl, aminomethyl (e.g., --CH.sub.2 NH--), or (substituted amino)methyl (e.g., --CH.sub.2 N(CH.sub.3)--); and

R.sup.4 is hydrogen, lower alkyl (e.g., --CH.sub.3, or --CH(CH.sub.3).sub.2), thien-2-yl, pyridin-3-yl, or ##STR2## wherein (i) V, W, X, Y, and Z are as defined herein.

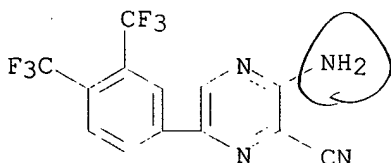
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 160602-30-2P 160602-32-4P 160602-33-5P

(prepn. and reactions for prepn. of insecticidal pteridines)

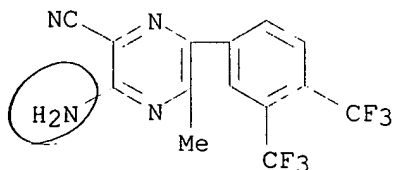
RN 160602-30-2 USPATFULL

CN Pyrazinecarbonitrile, 3-amino-6-[3,4-bis(trifluoromethyl)phenyl]- (9CI)  
(CA INDEX NAME)



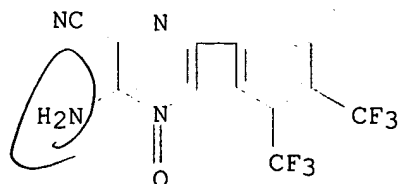
RN 160602-32-4 USPATFULL

CN Pyrazinecarbonitrile, 3-amino-6-[3,4-bis(trifluoromethyl)phenyl]-5-methyl- (9CI) (CA INDEX NAME)



RN 160602-33-5 USPATFULL

CN Pyrazinecarbonitrile, 3-amino-6-[3,4-bis(trifluoromethyl)phenyl]-, 4-oxide (9CI) (CA INDEX NAME)



L24 ANSWER 142 OF 145 USPATFULL  
 ACCESSION NUMBER: 92:55234 USPATFULL  
 TITLE: Luciferin derivatives  
 INVENTOR(S): Okamoto, Kaoru, Katoh, Japan  
 Goto, Toshio, Nakagawa, Japan  
 PATENT ASSIGNEE(S): Nippon Zoki Pharmaceutical Co., Ltd., Osaka, Japan  
 (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5128069		19920707
APPLICATION INFO.:	US 1990-496998		19900321 (7)

	NUMBER	DATE
PRIORITY INFORMATION:	JP 1989-71037	19890322
	JP 1989-91578	19890410
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	Granted	
PRIMARY EXAMINER:	Stoll, Robert L.	
ASSISTANT EXAMINER:	Harris, C.	
LEGAL REPRESENTATIVE:	Armstrong, Nikaido, Marmelstein, Kubovcik & Murray	
NUMBER OF CLAIMS:	4	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	1 Drawing Figure(s); 1 Drawing Page(s)	
LINE COUNT:	294	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to novel luciferin derivatives and salts thereof represented by the following formula (I), which are useful as chemiluminescence reagents. ##STR1## wherein X is hydrogen, an amino-protecting group, R--, R--CO--, R--SO<sub>2</sub>--, R--NHCO-- or R--NHCS--, R is a fluorescence probe, and n represents an integer of 1 to 4.

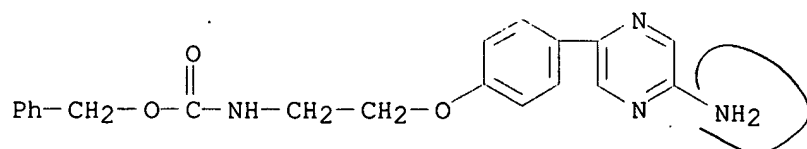
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 133118-04-4P

(prepn. and reaction of, in prepn. of chemiluminescent oxygen probe)

RN 133118-04-4 USPATFULL

CN Carbamic acid, [2-[4-(5-aminopyrazinyl)phenoxy]ethyl]-, phenylmethyl ester  
 (9CI) (CA INDEX NAME)





~~124~~ ANSWER 143 OF 145 USPATFULL  
 ACCESSION NUMBER: 91:90580 USPATFULL  
 TITLE: Method for evaluating antiallergic substances  
 INVENTOR(S): Namimatsu, Akio, Hyogo, Japan  
 Go, Kouichiro, Hyogo, Japan  
 PATENT ASSIGNEE(S): Nippon Zoki Pharmaceutical Co., Ltd., Osaka, Japan  
 (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5063045		19911105
APPLICATION INFO.:	US 1990-506039		19900409 (7)

	NUMBER	DATE
PRIORITY INFORMATION:	JP 1989-91578	19890410
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	Granted	
PRIMARY EXAMINER:	Schenkman, Leonard	
LEGAL REPRESENTATIVE:	Armstrong, Nikaido, Marmelstein, Kubovcik & Murray	
NUMBER OF CLAIMS:	6	
EXEMPLARY CLAIM:	1	
LINE COUNT:	300	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Antiallergic substances, are evaluated by measuring the amount of nasal secretion quantitatively using experimental animal models with nasal mucosal hypersensitivity.

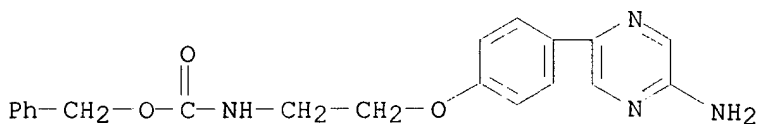
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 133118-04-4P

(prepn. and reaction of, in prepn. of chemiluminescent oxygen probe)

RN 133118-04-4 USPATFULL

CN Carbamic acid, [2-[4-(5-aminopyrazinyl)phenoxy]ethyl]-, phenylmethyl ester  
 (9CI) (CA INDEX NAME)



~~124~~ ANSWER 144 OF 145 USPATFULL  
 ACCESSION NUMBER: 79:2141 USPATFULL  
 TITLE: Preparation of benzoylureas  
 INVENTOR(S): Abdulla, Riaz F., Greenfield, IN, United States  
 Terando, Norman H., Indianapolis, IN, United States  
 PATENT ASSIGNEE(S): Eli Lilly and Company, Indianapolis, IN, United States  
 (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 4133956		19790109
APPLICATION INFO.:	US 1977-819639		19770727 (5)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Tovar, Jose		
LEGAL REPRESENTATIVE:	Whitaker, Leroy, Whale, Arthur R.		
NUMBER OF CLAIMS:	20		

EXEMPLARY CLAIM: 1

LINE COUNT: 441

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Benzoylureas are prepared from a benzamide, an alkyllithium, a phenyl chloroformate, and an amine. Two reaction sequences are described. The benzoylureas obtained by the process are useful as insecticides.

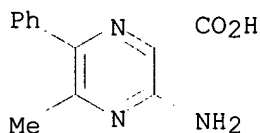
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 5284-16-2P 69816-43-9P

(prepn. and decarboxylation of)

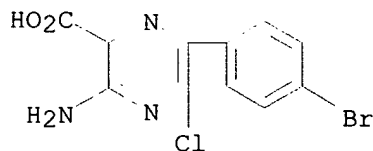
RN 5284-16-2 USPATFULL

CN Pyrazinecarboxylic acid, 3-amino-5-methyl-6-phenyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 69816-43-9 USPATFULL

CN Pyrazinecarboxylic acid, 3-amino-6-(4-bromophenyl)-5-chloro- (9CI) (CA INDEX NAME)

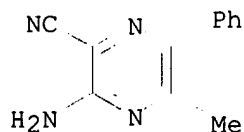


IT 59489-35-9P

(prepn. and hydrolysis of)

RN 59489-35-9 USPATFULL

CN Pyrazinecarbonitrile, 3-amino-5-methyl-6-phenyl- (9CI) (CA INDEX NAME)



IT 69816-57-5P 69816-60-0P 69816-61-1P

69816-62-2P 69816-65-5P 69816-66-6P

69816-67-7P 69816-69-9P 69816-70-2P

69816-71-3P 69816-72-4P 69816-73-5P

69816-74-6P 69816-75-7P 69816-76-8P

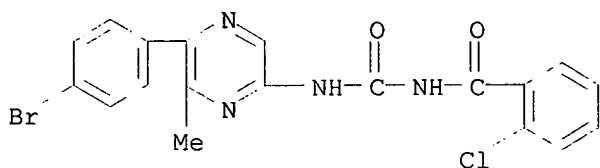
69816-77-9P 69816-78-0P 69816-79-1P

69816-80-4P 69816-81-5P 69816-83-7P

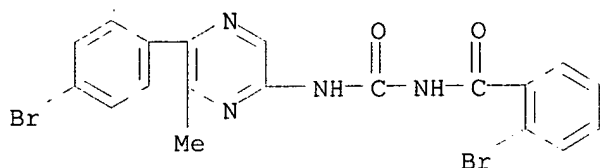
(prepn. and insecticidal activity of)

RN 69816-57-5 USPATFULL

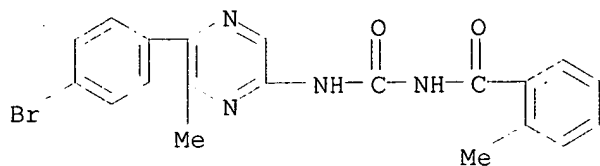
CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)



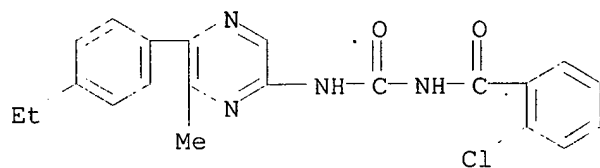
RN 69816-60-0 USPATFULL  
 CN Benzamide, 2-bromo-N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



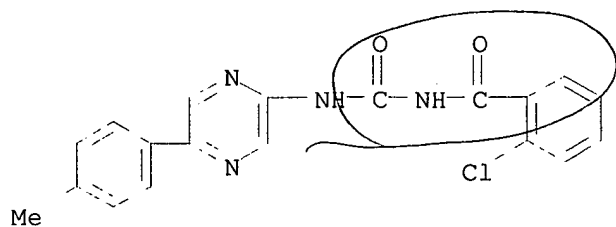
RN 69816-61-1 USPATFULL  
 CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2-methyl- (9CI) (CA INDEX NAME)



RN 69816-62-2 USPATFULL  
 CN Benzamide, 2-chloro-N-[[[5-(4-ethylphenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)

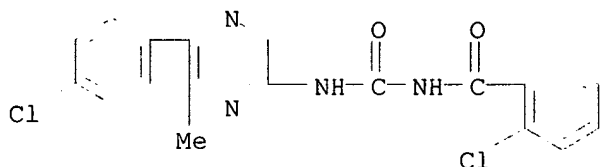


RN 69816-65-5 USPATFULL  
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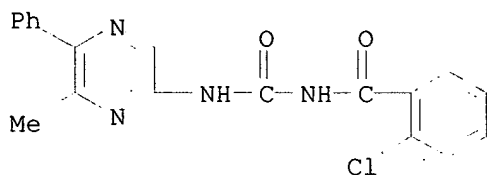
RN 69816-66-6 USPATFULL

CN Benzamide, 2-chloro-N-[[[5-(4-chlorophenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



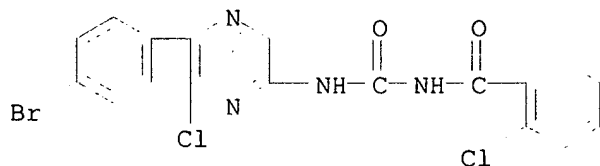
RN 69816-67-7 USPATFULL

CN Benzamide, 2-chloro-N-[[[6-methyl-5-phenylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



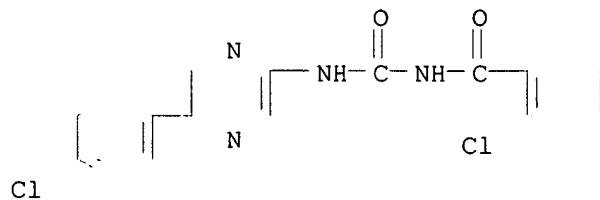
RN 69816-69-9 USPATFULL

CN Benzamide, N-[[[5-(4-bromophenyl)-6-chloropyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)



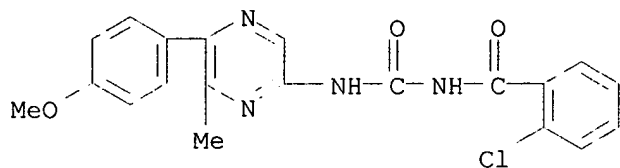
RN 69816-70-2 USPATFULL

CN Benzamide, 2-chloro-N-[[[5-(4-chlorophenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)

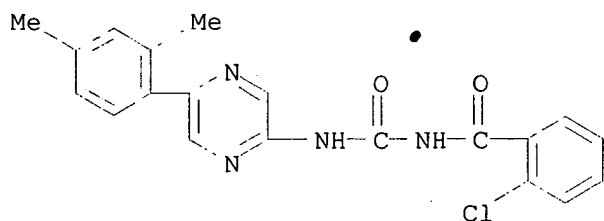


RN 69816-71-3 USPATFULL

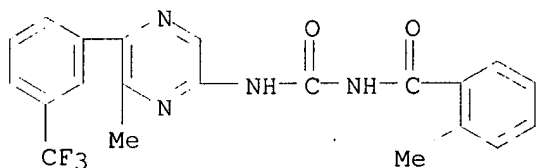
CN Benzamide, 2-chloro-N-[[[5-(4-methoxyphenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



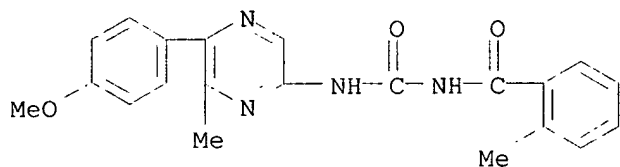
RN 69816-72-4 USPATFULL  
 CN Benzamide, 2-chloro-N-[[[5-(2,4-dimethylphenyl)pyrazinyl]amino]carbonyl]-  
 (9CI) (CA INDEX NAME)



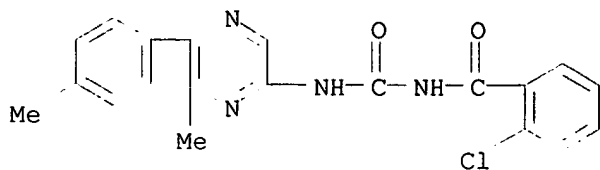
RN 69816-73-5 USPATFULL  
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 mino]carbonyl]- (9CI) (CA INDEX NAME)



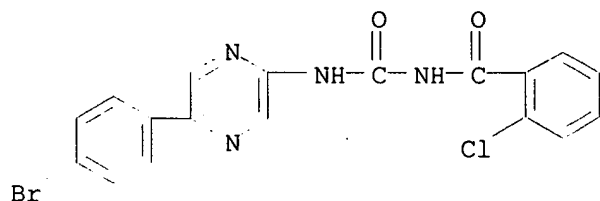
RN 69816-74-6 USPATFULL  
 CN Benzamide, N-[[[5-(4-methoxyphenyl)-6-methylpyrazinyl]amino]carbonyl]-2-  
 methyl- (9CI) (CA INDEX NAME)



RN 69816-75-7 USPATFULL  
 CN Benzamide, 2-chloro-N-[[[6-methyl-5-(4-methylphenyl)pyrazinyl]amino]carbon  
 yl]- (9CI) (CA INDEX NAME)

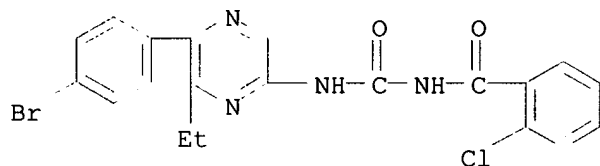


RN 69816-76-8 USPATFULL

CN Benzamide, N-[[[5-(4-bromophenyl)pyrazinyl]amino]carbonyl]-2-chloro- (9CI)  
(CA INDEX NAME)

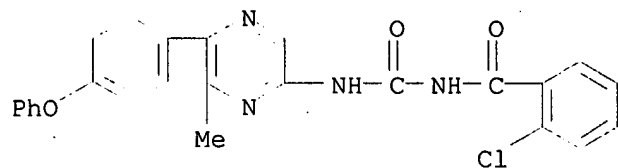
RN 69816-77-9 USPATFULL

CN Benzamide, N-[[[5-(4-bromophenyl)-6-ethylpyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)



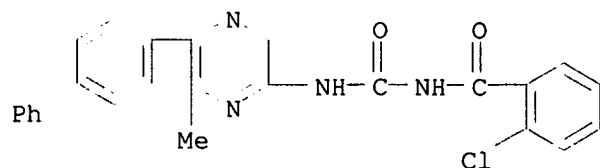
RN 69816-78-0 USPATFULL

CN Benzamide, 2-chloro-N-[[[6-methyl-5-(4-phenoxyphenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)

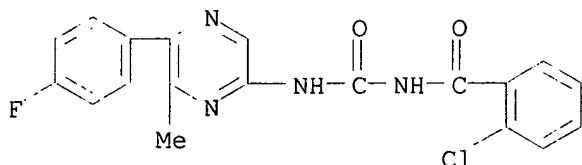


RN 69816-79-1 USPATFULL

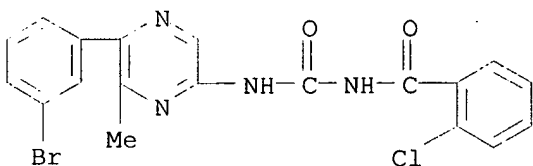
CN Benzamide, N-[[[5-[1,1'-biphenyl]-4-yl]-6-methylpyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)



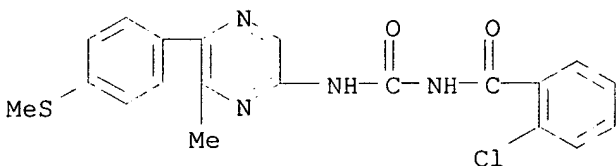
RN 69816-80-4 USPATFULL  
 CN Benzamide, 2-chloro-N-[[[5-(4-fluorophenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



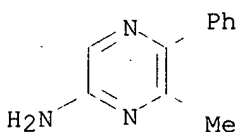
RN 69816-81-5 USPATFULL  
 CN Benzamide, N-[[[5-(3-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2-chloro- (9CI) (CA INDEX NAME)



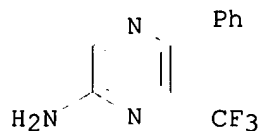
RN 69816-83-7 USPATFULL  
 CN Benzamide, 2-chloro-N-[[[6-methyl-5-[4-(methylthio)phenyl]pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



IT 59489-36-0P 69816-39-3P  
 (prepn. and reaction of, with benzoyl isocyanate)  
 RN 59489-36-0 USPATFULL  
 CN Pyrazinamine, 6-methyl-5-phenyl- (9CI) (CA INDEX NAME)



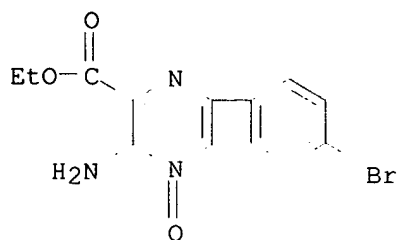
RN 69816-39-3 USPATFULL  
 CN Pyrazinamine, 5-phenyl-6-(trifluoromethyl)- (9CI) (CA INDEX NAME)



IT 69816-40-6P

(prepn. and reaction of, with phosphorus oxychloride)

RN 69816-40-6 USPATFULL

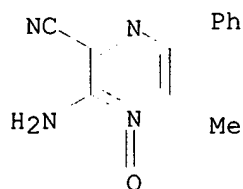
CN Pyrazinecarboxylic acid, 3-amino-6-(4-bromophenyl)-, ethyl ester, 4-oxide  
(9CI) (CA INDEX NAME)

IT 59489-34-8P

(prepn. and redn. of)

RN 59489-34-8 USPATFULL

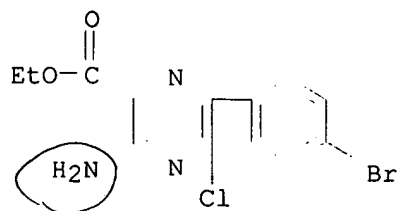
CN Pyrazinecarbonitrile, 3-amino-5-methyl-6-phenyl-, 4-oxide (9CI) (CA INDEX NAME)



IT 69816-42-8P

(prepn. and sapon. of)

RN 69816-42-8 USPATFULL

CN Pyrazinecarboxylic acid, 3-amino-6-(4-bromophenyl)-5-chloro-, ethyl ester  
(9CI) (CA INDEX NAME)

IT 59489-55-3P 59489-59-7P 69816-33-7P

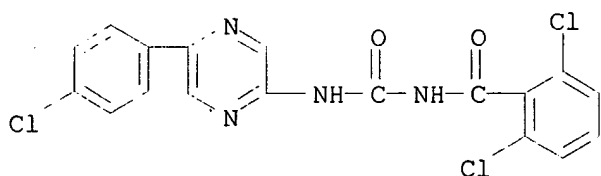
69816-84-8P 69816-85-9P 69816-86-0P

69816-87-1P



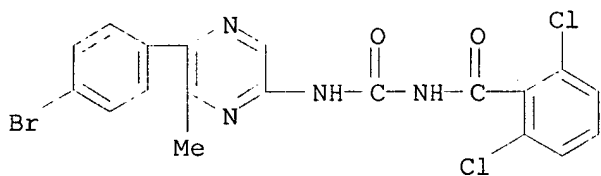
(prepn. of)

RN 59489-55-3 USPATFULL

CN Benzamide, 2,6-dichloro-N-[[[5-(4-chlorophenyl)pyrazinyl]amino]carbonyl]-  
(9CI) (CA INDEX NAME)

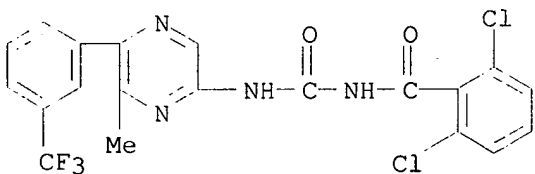
RN 59489-59-7 USPATFULL

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)



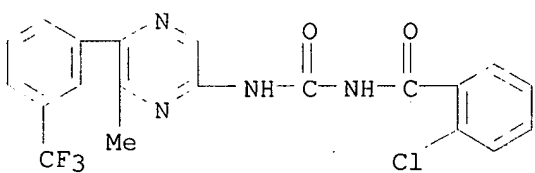
RN 69816-33-7 USPATFULL

CN Benzamide, 2,6-dichloro-N-[[[6-methyl-5-[3-(trifluoromethyl)phenyl]pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



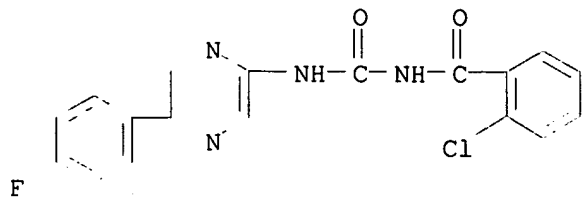
RN 69816-84-8 USPATFULL

CN Benzamide, 2-chloro-N-[[[6-methyl-5-[3-(trifluoromethyl)phenyl]pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



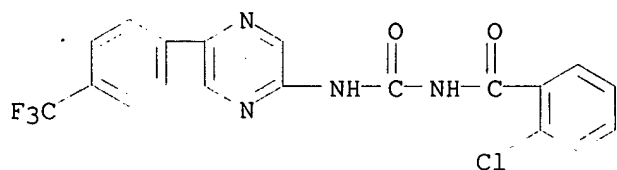
RN 69816-85-9 USPATFULL

CN Benzamide, 2-chloro-N-[[[5-(4-fluorophenyl)pyrazinyl]amino]carbonyl]-  
(9CI) (CA INDEX NAME)



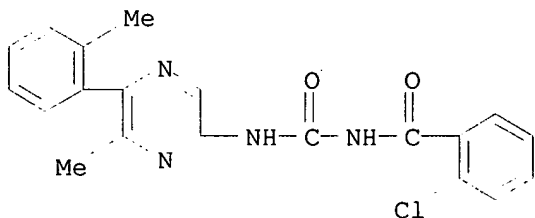
RN 69816-86-0 USPATFULL

CN Benzamide, 2-chloro-N-[[[5-[4-(trifluoromethyl)phenyl]pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



RN 69816-87-1 USPATFULL

CN Benzamide, 2-chloro-N-[[[6-methyl-5-(2-methylphenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)

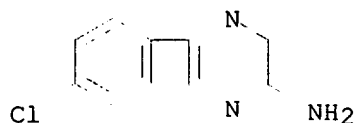


IT 59489-72-4 59489-75-7 69816-34-8

(reaction of, with benzamide and chloroformate)

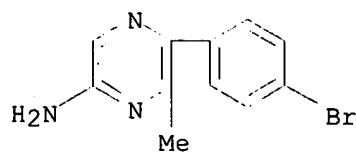
RN 59489-72-4 USPATFULL

CN Pyrazinamine, 5-(4-chlorophenyl)- (9CI) (CA INDEX NAME)

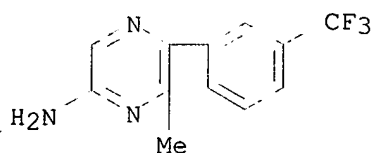


RN 59489-75-7 USPATFULL

CN Pyrazinamine, 5-(4-bromophenyl)-6-methyl- (9CI) (CA INDEX NAME)

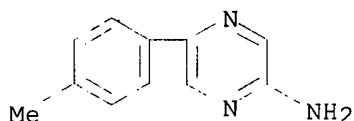


RN 69816-34-8 USPATFULL  
CN Pyrazinamine, 6-methyl-5-[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)

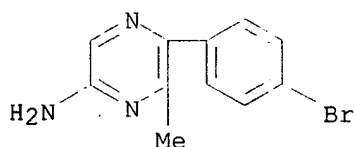


IT 59489-73-5 59489-75-7 59489-78-0  
59489-79-1 59489-80-4 59489-82-6  
69816-34-8 69816-44-0 69816-45-1  
69816-46-2 69816-47-3 69816-48-4  
69816-49-5 69816-50-8 69816-51-9  
69816-52-0 69816-53-1 69816-55-3  
69816-56-4  
(reaction of, with benzoyl isocyanate)

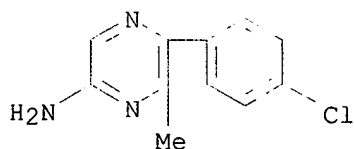
RN 59489-73-5 USPATFULL  
CN Pyrazinamine, 5-(4-methylphenyl)- (9CI) (CA INDEX NAME)



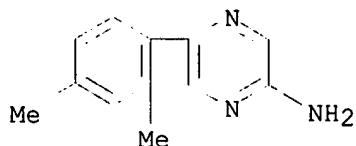
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CN Pyrazinamine, 5-(4-bromophenyl)-6-methyl- (9CI) (CA INDEX NAME)



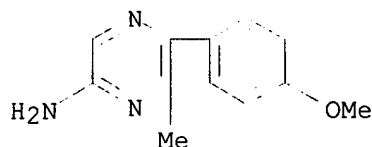
RN 59489-78-0 USPATFULL  
CN Pyrazinamine, 5-(4-chlorophenyl)-6-methyl- (9CI) (CA INDEX NAME)



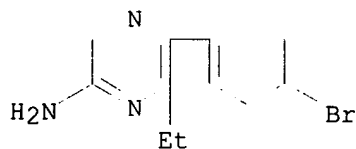
RN 59489-79-1 USPATFULL  
CN Pyrazinamine, 5-(2,4-dimethylphenyl)- (9CI) (CA INDEX NAME)



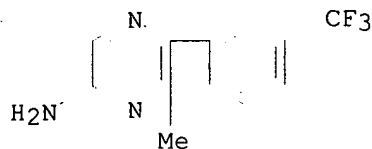
RN 59489-80-4 USPATFULL  
 CN Pyrazinamine, 5-(4-methoxyphenyl)-6-methyl- (9CI) (CA INDEX NAME)



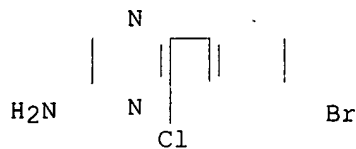
RN 59489-82-6 USPATFULL  
 CN Pyrazinamine, 5-(4-bromophenyl)-6-ethyl- (9CI) (CA INDEX NAME)



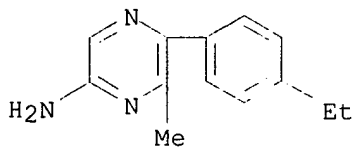
RN 69816-34-8 USPATFULL  
 CN Pyrazinamine, 6-methyl-5-[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



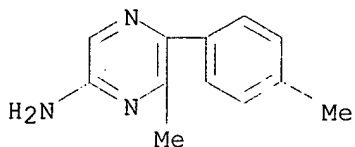
RN 69816-44-0 USPATFULL  
 CN Pyrazinamine, 5-(4-bromophenyl)-6-chloro- (9CI) (CA INDEX NAME)



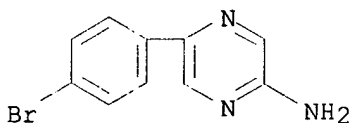
RN 69816-45-1 USPATFULL  
 CN Pyrazinamine, 5-(4-ethylphenyl)-6-methyl- (9CI) (CA INDEX NAME)



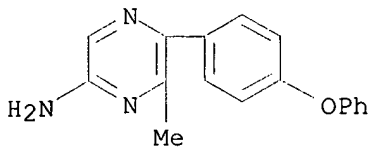
RN 69816-46-2 USPATFULL  
CN Pyrazinamine, 6-methyl-5-(4-methylphenyl)- (9CI) (CA INDEX NAME)



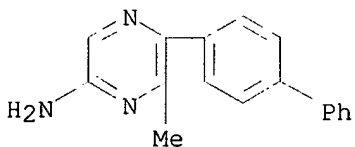
RN 69816-47-3 USPATFULL  
CN Pyrazinamine, 5-(4-bromophenyl)- (9CI) (CA INDEX NAME)



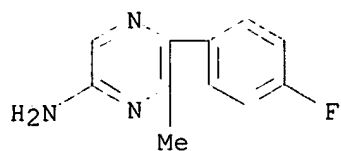
RN 69816-48-4 USPATFULL  
CN Pyrazinamine, 6-methyl-5-(4-phenoxyphenyl)- (9CI) (CA INDEX NAME)



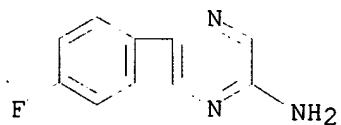
RN 69816-49-5 USPATFULL  
CN Pyrazinamine, 5-[1,1'-biphenyl]-4-yl-6-methyl- (9CI) (CA INDEX NAME)



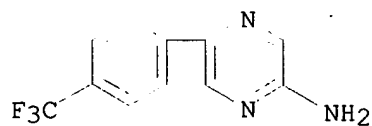
RN 69816-50-8 USPATFULL  
CN Pyrazinamine, 5-(4-fluorophenyl)-6-methyl- (9CI) (CA INDEX NAME)



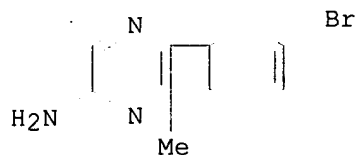
RN 69816-51-9 USPATFULL  
 CN Pyrazinamine, 5-(4-fluorophenyl)- (9CI) (CA INDEX NAME)



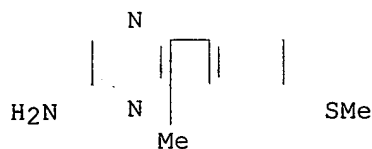
RN 69816-52-0 USPATFULL  
 CN Pyrazinamine, 5-[4-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



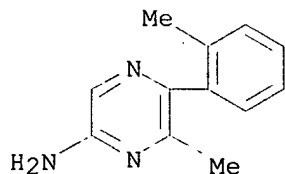
RN 69816-53-1 USPATFULL  
 CN Pyrazinamine, 5-(3-bromophenyl)-6-methyl- (9CI) (CA INDEX NAME)



RN 69816-55-3 USPATFULL  
 CN Pyrazinamine, 6-methyl-5-[4-(methylthio)phenyl]- (9CI) (CA INDEX NAME)



RN 69816-56-4 USPATFULL  
 CN Pyrazinamine, 6-methyl-5-(2-methylphenyl)- (9CI) (CA INDEX NAME)

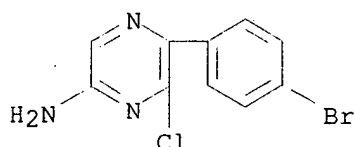


IT 69816-44-0

(reaction of, with benzoyl isocyanates)

RN 69816-44-0 USPATFULL

CN Pyrazinamine, 5-(4-bromophenyl)-6-chloro- (9CI) (CA INDEX NAME)



L24 ANSWER 145 OF 145

USPATFULL

ACCESSION NUMBER:

76:54147 USPATFULL

TITLE:

Lock device

INVENTOR(S):

Tinkle, Roger, 3035 Timlin Court, Roselawn, IN, United States 46310

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 3984137		19761005
APPLICATION INFO.:	US 1975-595504		19750714 (5)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Moore, Richard E.		
LEGAL REPRESENTATIVE:	Leuca, Walter		
NUMBER OF CLAIMS:	2		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	5 Drawing Figure(s); 1 Drawing Page(s)		
LINE COUNT:	154		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A security lock which secures a building entrance against unauthorized entry by linking together the outer and inner doors against their respective door frame stops. This invention comprises link members wherein one member thereof is anchored to the outer door and the other member is a hinged link which passes through the inner door and is prevented from being withdrawn by a manually operated latch. When the security lock is not in use, the hinged link is pivoted out of the way.

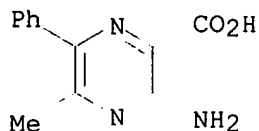
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 5284-16-2P

(prepn. and decarboxylation of)

RN 5284-16-2 USPATFULL

CN Pyrazinecarboxylic acid, 3-amino-5-methyl-6-phenyl- (7CI, 8CI, 9CI) (CA INDEX NAME)

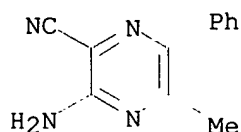


IT 59489-35-9P

(prepn. and hydrolysis of)

RN 59489-35-9 USPATFULL

CN Pyrazinecarbonitrile, 3-amino-5-methyl-6-phenyl- (9CI) (CA INDEX NAME)



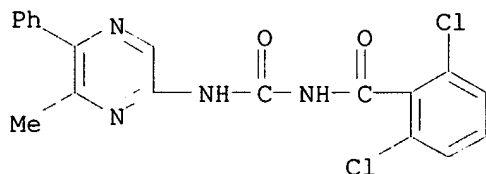
IT 59489-52-0P 59489-55-3P 59489-57-5P

59489-59-7P 59489-62-2P 59489-63-3P

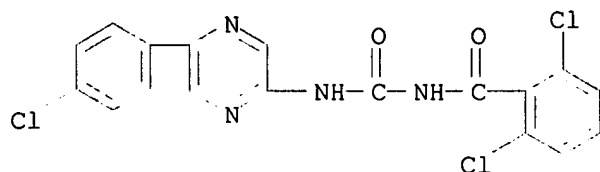
59489-64-4P 59489-65-5P 59489-69-9P

(prepn. and insecticidal activity of)

RN 59489-52-0 USPATFULL

CN Benzamide, 2,6-dichloro-N-[[[5-(4-chlorophenyl)pyrazinyl]amino]carbonyl]-  
(9CI) (CA INDEX NAME)

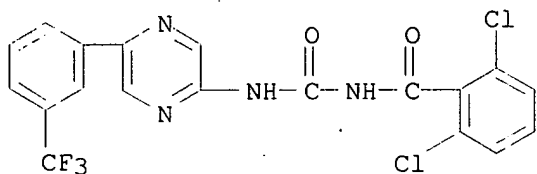
RN 59489-55-3 USPATFULL

CN Benzamide, 2,6-dichloro-N-[[[5-(4-chlorophenyl)pyrazinyl]amino]carbonyl]-  
(9CI) (CA INDEX NAME)

RN 59489-57-5 USPATFULL

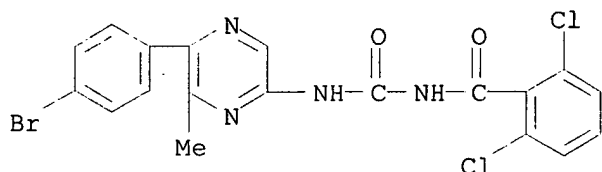
CN Benzamide, 2,6-dichloro-N-[[[5-[3-(trifluoromethyl)phenyl]pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)





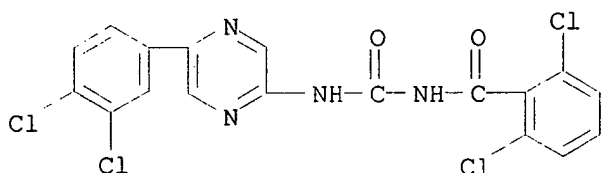
RN 59489-59-7 USPATFULL

CN Benzamide, N-[[[5-(4-bromophenyl)-6-methylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)



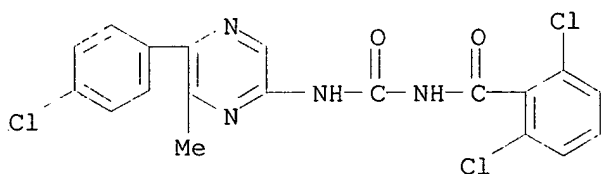
RN 59489-62-2 USPATFULL

CN Benzamide, 2,6-dichloro-N-[[[5-(3,4-dichlorophenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



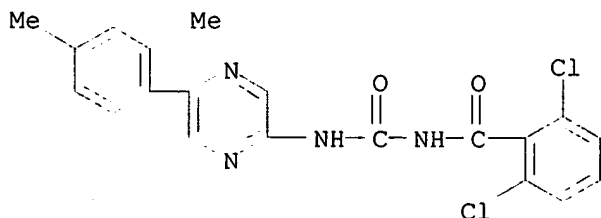
RN 59489-63-3 USPATFULL

CN Benzamide, 2,6-dichloro-N-[[[5-(4-chlorophenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



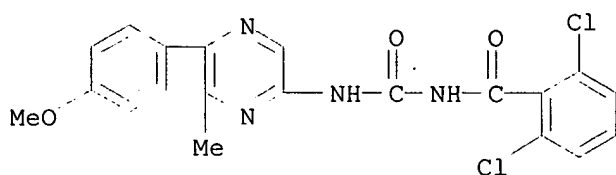
RN 59489-64-4 USPATFULL

CN Benzamide, 2,6-dichloro-N-[[[5-(2,4-dimethylphenyl)pyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



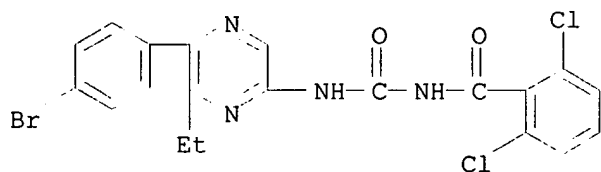
RN 59489-65-5 USPATFULL

CN Benzamide, 2,6-dichloro-N-[[[5-(4-methoxyphenyl)-6-methylpyrazinyl]amino]carbonyl]- (9CI) (CA INDEX NAME)



RN 59489-69-9 USPATFULL

CN Benzamide, N-[[[5-(4-bromophenyl)-6-ethylpyrazinyl]amino]carbonyl]-2,6-dichloro- (9CI) (CA INDEX NAME)

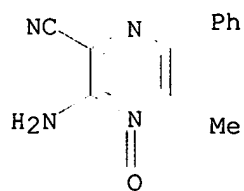


IT 59489-34-8P

(prepn. and redn. of)

RN 59489-34-8 USPATFULL

CN Pyrazinecarbonitrile, 3-amino-5-methyl-6-phenyl-, 4-oxide (9CI) (CA INDEX NAME)

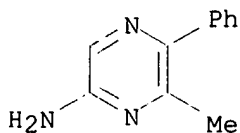


IT 59489-36-0P

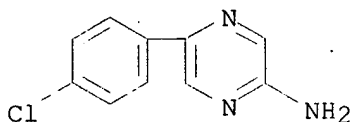
(prepn. of)

RN 59489-36-0 USPATFULL

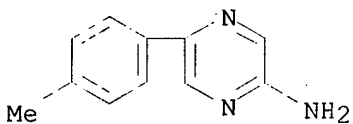
CN Pyrazinamine, 6-methyl-5-phenyl- (9CI) (CA INDEX NAME)



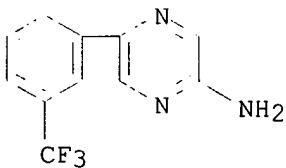
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 RN 59489-72-4 USPATFULL  
 CN Pyrazinamine, 5-(4-chlorophenyl)- (9CI) (CA INDEX NAME)



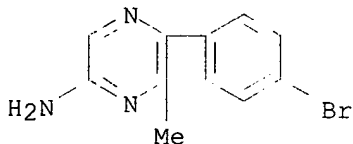
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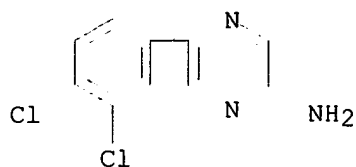
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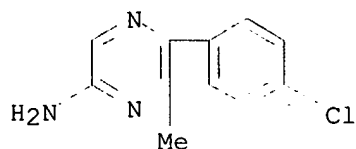
RN 59489-75-7 USPATFULL  
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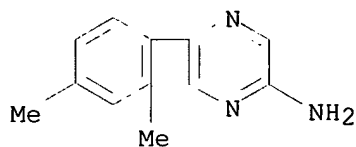
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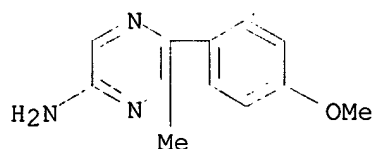
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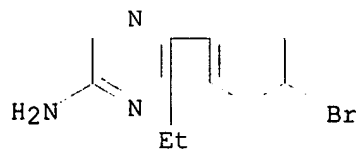
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RN 59489-80-4 USPATFULL  
 CN Pyrazinamine, 5-(4-methoxyphenyl)-6-methyl- (9CI) (CA INDEX NAME)



RN 59489-82-6 USPATFULL  
 CN Pyrazinamine, 5-(4-bromophenyl)-6-ethyl- (9CI) (CA INDEX NAME)



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Searched by Barb O'Bryen, STIC 308-4291

FILE LAST UPDATED: 01 May 1997 (19970501/UP)

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L25 3 L21

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FILE COVERS 1907-1966

FILE LAST UPDATED: 01 May 1997 (19970501/UP)

This file contains CAS Registry Numbers for easy and accurate substance identification. Title keywords, authors, patent assignees, and patent information, e.g., patent numbers, are now searchable from 1907-1966. TIFF images of CA abstracts printed between 1907-1966 are available in the PAGE display formats.

This file supports REGISTRY for direct browsing and searching of all substance data from the REGISTRY file. Enter HELP FIRST for more information.

L25 ANSWER 1 OF 3 CAOLD COPYRIGHT 2001 ACS

ACCESSION NUMBER: CA64:12698g CAOLD

TITLE: hypoxanthine 1-N-oxide

AUTHOR NAME: Kawashima, Hideaki; Meguro, T.; Kumashiro, I.; Takenishi, T.

PATENT ASSIGNEE: Ajinomoto Co., Inc.

DOCUMENT TYPE: Patent

TITLE: pyrazine diuretics

PATENT ASSIGNEE: Merck & Co., Inc.

DOCUMENT TYPE: Patent

	PATENT NO.	KIND	DATE
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PI	JP 66001536		1966
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PI	NL 6409714		
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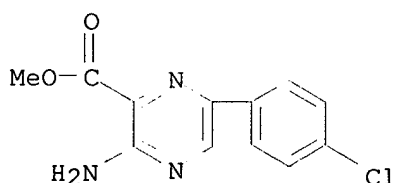
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IT **1148-80-7** **1634-17-9** **1680-39-3**

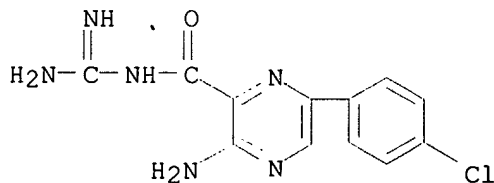
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CN Pyrazinecarboxylic acid, 3-amino-6-(p-chlorophenyl)-, methyl ester (7CI, 8CI) (CA INDEX NAME)



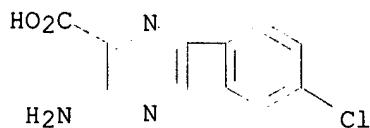
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CN Pyrazinecarboxamide, 3-amino-N-(aminoiminomethyl)-6-(4-chlorophenyl)- (9CI) (CA INDEX NAME)



RN 1680-39-3 CAOLD

CN Pyrazinecarboxylic acid, 3-amino-6-(p-chlorophenyl)- (7CI, 8CI) (CA INDEX NAME)



L25 ANSWER 2 OF 3 CAOLD COPYRIGHT 2001 ACS

ACCESSION NUMBER: CA64:8208d CAOLD

TITLE: pyrazinecarboxylic acid derivs.

PATENT ASSIGNEE: Merck & Co., Inc.

DOCUMENT TYPE: Patent

PATENT NO. KIND DATE

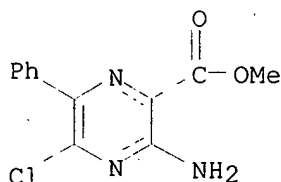
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IT **1503-39-5**

RN 1503-39-5 CAOLD

CN Pyrazinecarboxylic acid, 3-amino-5-chloro-6-phenyl-, methyl ester (7CI, 8CI) (CA INDEX NAME)



L25 ANSWER 3 OF 3 CAOLD COPYRIGHT 2001 ACS

ACCESSION NUMBER: CA62:14698f CAOLD

TITLE: guanidines (substituted)

PATENT ASSIGNEE: Merck & Co., Inc.

DOCUMENT TYPE: Patent

TITLE: substituted guanidines

AUTHOR NAME: Cragoe, Edward J., Jr.

DOCUMENT TYPE: Patent

PATENT NO.	KIND	DATE
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PI BE 639386

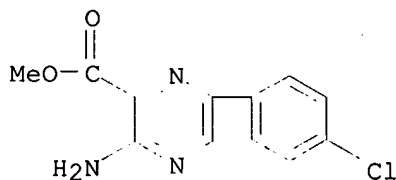
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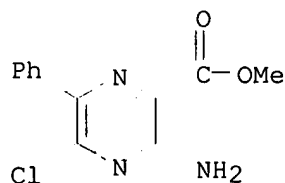
RN 1148-80-7 CAOLD

CN Pyrazinecarboxylic acid, 3-amino-6-(p-chlorophenyl)-, methyl ester (7CI, 8CI) (CA INDEX NAME)



RN 1503-39-5 CAOLD

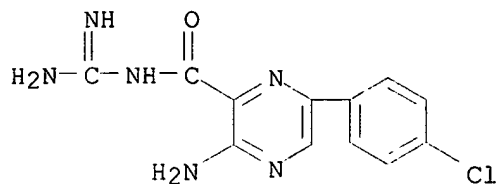
CN Pyrazinecarboxylic acid, 3-amino-5-chloro-6-phenyl-, methyl ester (7CI, 8CI) (CA INDEX NAME)



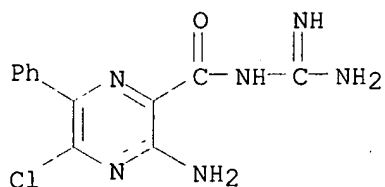
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CN Pyrazinecarboxamide, 3-amino-N-(aminoiminomethyl)-6-(4-chlorophenyl)- (9CI) (CA INDEX NAME)

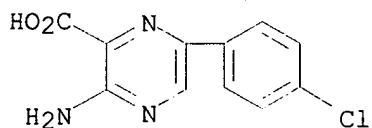




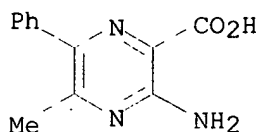
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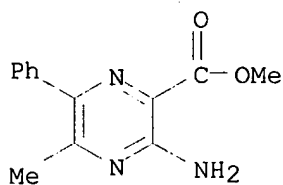
RN 1680-39-3 CAOLD  
 CN Pyrazinecarboxylic acid, 3-amino-6-(p-chlorophenyl)- (7CI, 8CI) (CA INDEX NAME)



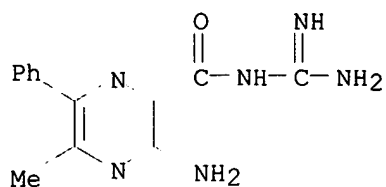
RN 5284-16-2 CAOLD  
 CN Pyrazinecarboxylic acid, 3-amino-5-methyl-6-phenyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 5354-75-6 CAOLD  
 CN Pyrazinecarboxylic acid, 3-amino-5-methyl-6-phenyl-, methyl ester (7CI, 8CI) (CA INDEX NAME)



RN 7202-20-2 CAOLD  
CN Pyrazinecarboxamide, N-amidino-3-amino-5-methyl-6-phenyl- (7CI, 8CI) (CA  
INDEX NAME)



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